THE MINERAL WELLS OF WIESBADEN AND THEIR SANATIVE EFFICACY.

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Stahlstich v. F. [illegible] Id. Darmstadt

[illegible] LE CHANCELIER A. MERIENNE

Mainz bei C.C. Kunze. Eigenthum des Verlegers.

Stahlstich v. P. Grimewald Darmstadt

DIE GROSSE SAAL-SEITE VOM PARK IN WIESBADEN.

LA GRANDE SALLE VUE DU CÔTÉ DU PARC A WIESBADE.

Mainz bei C. G. Kunze, Particulum des Verlegers

THE

MINERAL WELLS

OF

WIESBADEN

AND

THEIR SANATIVE EFFICACY,

DESCRIBED AND ILLUSTRATED

BY

EXPERIMENTAL EVIDENCE

BY

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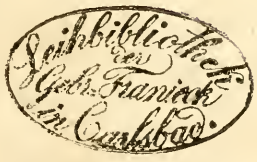

DARMSTADT, FRANCFORT AND GIESSEN

PUBLISHED BY G. F. HEYER, SEN.

1833.

PREFACE,

(particularly recommended to the perusal of such patients as are afflicted with gout, rheumatism and headake.)

WHEN informed that an English translation of this treatise was preparing, I was at the same time requested to make such alterations and additions as this new designation of it might appear to me to require. I am, however, sorry to observe, that my numerous professional avocations do not allow me to add to this publication, as I intended, a more detailed treatise on gout and rheumatism, and to newmould some chapters of the original, in a manner that would have made it more suitable to its new designation. Being necessitated totally to relinquish this intention of newmodelling this work, I lament being obliged to confine myself to the following observations regarding the abovementioned subjects:

1. *Gout*, or *rheumatisms*, whilst attended with fever, may not be expected to be cured by means of our thermal waters; neither will

they afford relief in cases not, indeed, accompanied by fevers, though still attended with some local gouty or rheumatic pain, f. i. above the knee, *verging* to an inflammatory state. In the former case the fever and the pain in the articulations would immediately encrease, — and in the latter, the inflammatory local suffering become more painful, and even unite with a general fever. Patients of this description require to be previously fitted for the successful use of thermal waters by a pharmaceutical treatment.

2. It might be supposed that *rheumatic affections* of particular limbs, apparently of no alarming nature (frequently attended with but slight swellings of the latter) would soon be removed by the use of a thermal water that, frequently in a short time, gets the better even of contractures owing to *gout*. The reverse, however, frequently takes place. Rheumatic pains in the articulations of the shoulders and knees, in particular, often require 30 and more baths, assisted by the simultaneous application of steam- and douche-baths. Recent rheumatic pains, however, are frequently removed by a few baths.

3. It cannot be denied that the mineral water of Wiesbaden is more efficacious than all other thermal springs in the cure of *long-standing* sufferings of the above kind. The great number of patients that annually are cur-

ed here of the most obstinate contractures which had for many years defied all medical art, and who had vainly repaired for relief to other mineral springs, puts this assertion beyond all doubt. It cannot, however, be denied that here, too, the possibility of effecting a cure is limited by a long progress of articular disorganisation, a metastasis of a stonelike matter, and an incurable languor of general vitality.

4. When contractures of limbs spread over several articulations, no amendment may be expected to take place before the entire organism has been put into a state of greater excitement, and *secretions by means of sweat and urine, in the shape of crises,* have been effected — or the patient begins to mend only slightly, and a complete, or, at least, progressive, recovery commences first, without perceptible secretions, within the next 2—4 months after the use of the thermal water. In the former case 35—45 baths — rarely fewer — are required, before the symptoms of incipient amendment appear, when the pulse becomes more vigorous, and a sour, fetid, frequently very copious, sweat, lasting 2—4 hours, breaks out, at uncertain periods, by day or night. When the former happens, the patient should instantly go to bed, after it has been well aired, and if the transpiration should chance to develope itself but faintly, encourage it by taking copious draughts of warm tea. The salubrity of this

sweat is evinced by the patient's feeling himself more vigorous after each crisis, and freer in his motions, as well as by the almost perceptible decrease of the stiffness and contracture of his limbs. When this crisis takes place, the patient should immediately put on warmer clothing, and be very careful to avoid catching cold.

5. This critical sweat rarely appears more than once in the course of 24 hours, though it frequently intermits entirely for some days, whilst only a copious settlement in the urine is perceived *). These crises, sometimes, do not take place in the first year of bathing, when the vitality of the body is reduced too much, and the patient verging too much to a state of consumption to be able to bear a sufficient number of baths. In this case it is necessary that the whole organism should previously be restored to a proper degree of general vitality, in order to qualify him for these critical secretions in the *second year*. He bears, for this purpose, in the first year, only a small number of baths, which, besides, may not be administered in immediate succession, but must be taken in intervals of some days. Sometimes it is also required that even general preparative pharmaceutical medicines should be given. I also have observed that medicines qualified

*) This sweating period may last 4—6 weeks, when it ceases gradually.

to revive the articular activity, when nearly extinct (f. i. the internal and external administration of *Sabina),* may be very conducive to promote those crises. It should, moreover, be observed, that not *each* copious transpiration — to which bathers, in general, are very liable in this place — is a *critical* sweat. Did not this critical transpiration, as it is called, bear a peculiar character, distinguishing it from all others, and did it not secrete a specific matter, vapour-baths, which make *all* individuals transpire copiously, would be sufficient to cure all arthritic patients, which, however, is not the case.

6. Not *all* arthritic patients, however, nor *all* contractures of limbs are cured by these copious critical sweats. There are a great many cases in which these secretions are not perceived, and the patients recover nevertheless. These copious critical secretions seem to be peculiar only to gouty complaints, or rheumatisms *that have made a considerable progress;* for I have yet observed them in slighter cases of rheumatism or gout.

7. It has been ascertained long since that the majority of patients resorting for relief to our thermal wells, towards the end of their stay at this place find their health considerably improved, whilst others are cured completely. The latter, however, are by far less numerous. A great majority of sufferers, when leaving Wiesbaden, feel themselves more debilitated and irrit-

able than they were on their arrival — nay they frequently are afflicted with additional, though trifling, sufferings, and, notwithstanding, are cured completely in a few weeks or months, feeling themselves, as it happens to all that bathe here, considerably more vigourous than they were before they had recourse to our baths.

It is highly important to know this, to prevent them from getting faint-hearted during the thermal treatment and flying to the use of hurtful medicines, that would defeat the salutary effects resulting from the use of the mineral water. The patient regularly begins to mend rapidly, at the very time when his pains grow most acute, and walking becomes most difficult. This subject I have discussed more largely in several passages of this work, f. i. Chap. VII, VIII, XVII; but more especially Ch. XXIV.

A brief statement of the subsequent remarkable case may serve as a proof of the above assertion:

A young man of about 30 years, having enjoyed an uninterrupted state of good health, whose carriage was upset on a journey he was performing in 1827, and who assisted with uncommon exertion in raising it, soon after was affected with pains in the back, which he, however, did not mind much. Some years after, he repaired to the sea-baths of Norderney, upon which, in the subsequent winter, his pains be-

came so violent, especially in the evening, that sleepless nights began to aggravate his sufferings. Being a military man, he had till then neglected having recourse to medical aid, but now found himself constrained to communicate his case to his father, one of the most celebrated and distinguished physicians of Germany *), who was highly alarmed, when he discovered a very painful tumour next to the patient's dorsal spine, having the appearance of an incipient deeper inflammatory formation of an abscess in that spot. The patient, at the same time, was affected with a very painful sensation in the upper part of his legs, and, when walking, they felt extreemly weak. I shall here pass over, as foreign to my immediate purpose, the special treatment of his disorder, which the alarming nature of the case required to be very energetic.

Though the patient enjoyed, upon the whole, an excellent state of health, his nervous system had always been very irritable, in consequence of which he was invariably liable to violent spasmodic fits, whenever painful and weakening remedies, such as moxa a. t. l., were applied. Accesses of fever contributed, at the same time, to render his case more alarming, and it became continually more evident that

*) Sir St. ., Physician to the king of England, at Hanover.

the fibrous integuments of the lower parts of the dorsal spine were violently affected by rheumatic inflammation, which, considering the long duration of the disorder, justified the apprehension that local alterations could not but have taken place already. By means of a proper medical treatment the patient now gained some hope of approaching recovery, inasmuch as, notwithstanding frequent relapses, the tumor in the region of the loins disappeared, and the pain in the dorsal spine abated; yet, when in June 1832 he revisited Wiesbaden, the latter had not left him entirely, neither had the pain in his thighs ceased completely. The upper part of his body was stiff and somewhat bent to the right side; walking was still a difficult task for him, and very insecure, on account of the weakness of his legs.

The sufferings of the patient, besides, were aggravated by the state of his abdomen. He was tortured by a most obstinate constipation, from which he could be relieved only by artificial means. At night he was affected with accesses of a peculiar nature, his whole body, when abed, being seized with an excessive chill, obstinately resisting all external calefactory applications, continuing till midnight, and not allowing him to sleep before he had fallen into a general transpiration of considerable continuance. This state was frequently accompanied by a swelling of the abdomen, repeated eructa-

tions and an anxiety that compelled him to get out of his bed.

His complexion was, at the same time, of a grayish yellow hue, his body emaciated, and his pulse feverish. He was on the verge of a general consumption, while the state of his dorsal spine and abdomen afforded but little hope of his final recovery. All assistance of the medical art, though rendered, by a masterly hand in the latter period of his illness, was unequal to afford him relief.

On his arrival at Wiesbaden this gentleman could only at intervals bear short baths. Being gradually enabled to bear them better, he could protract the time of bathing to half an hour. Clysters of warm mineral water were administered at the same time, while he was drinking the thermal water, which he *in a short time could bear in large doses,* in the morning and evening.

At a later period he had douche-baths applied to his abdomen and legs, but they did not yet appear to agree with the irritability of his spine. Towards the close of his stay at our wells he took some mineral vapour-baths.

When his abdomen gradually was disencumbered of material congestions, and the stagnant secretions of the organs of digestion, together with the abdominal nervous system, began to be less restrained, his mind grew proportionably more cheerful, his appetite encreased, the diffi-

culty of digestion and the nocturnal nervous accesses abated considerably, and his body gained more vigour. The pain in his spine, as well as the weakness and uneasy sensation in his legs had, however, abated very little, when the patient closed the thermal treatment at our wells for that season, after he had taken 25 baths.

The same person afterwards took some additional chalybeate baths at Schwalbach, which may have contributed considerably to invigorate his frame still more.

Our patient did, indeed, spend the winter of 1831—1832 in a state much more tolerable than that of the preceding one; however he continued being troubled with constipations, whilst the nocturnal nervous accesses gradually became more violent, his appearance more alarming, and his spine and legs were nearly as painful as they had been on his arrival at Wiesbaden.

In this state he returned to Wiesbaden in summer 1832 to make another trial of the efficacy of our wells.

Our thermal water again agreed extremely well with him, both as drink and applied in clysters; the functions of his abdomen became somewhat more regular, the painful eructations of flatulencies grew less troublesome, the chilling fit with which his whole body used to be seized at night, abated, and the entire state of the apparatus of digestion was improved. *Bathing,*

however, did not appear to agree with the patient so well as it had done in the preceding season. He soon became very irritable, could not bear bathing daily, his sleep was very restless and broken, — the pains and weakness in the back and legs grew more intense, his gait more staggering and fatiguing, while the rump of his body was bent more forward than it had been when he first came to our wells. In this state of sufferance I found it difficult to keep up the patients spirits and to uphold his reliance upon the efficacy of our thermal water. Finding himself, as it appeared, less capable of locomotion than on his arrival at the wells, he left Wiesbaden, proceeding on his return, as advised by me, by a circuitous route, in short stages.

In Nov. of last year, his father wrote to me, among others, as follows: „The care and kindness, with which you have directed the thermal treatment of my son for two successive seasons, render it incumbent upon me to inform you of his incipient recovery, especially as this happy turn tends to the honour of your wells, and is particularly remarkable, since no symptom of actual amendment appeared during the thermal treatment, nay, his case even seemed to be growing decidedly worse, especially towards the close of it. Already on his journey he felt himself mending; his stools are regular, without the aid of medicines; his sleep is not broken, his vigour encreasing rapidly,

his gait growing very easy, whilst he is visibly gaining flesh, and his countenance betrays no symptoms of indisposition whatewer. His recovery is complete; not even the slightest trace of his late illness is to be perceived. He has not taken the smallest particle of medicine, since his return from Wiesbaden. His wife, with whom he had lived eight years in barren wedlock, is pregnant at present etc. etc."

Here we have an instance of a very complicate disease, which had reduced the patient to the brink of the grave. The *medical art* only could put a stop to the farther progress of the *inflammatory* developement of the disorder, and prepare the latter for the use of the thermal wells of Wiesbaden. It was unsuccessfully exerted against the *chronical* form of the disorder. It is remarkable — though frequently occurring at all thermal wells — that the patient did not derive any essential benefit from two successive thermal treatments, besides a slight improvement of the faculty of digestion, and a remission of the nocturnal nervous accesses, nay, that in the second year his disorder even had become more alarming — and that a complete recovery immediately succeeded an evident aggravation of the malady *).

*) More particular observations respecting gout and rheumatism will be found in Ch. XII. and XIII. of this work.

The efficacy of the thermal water of Wiesbaden in the most desparate disorders having got known better and properly appreciated within these last fifteen years, the number of annual visitors has doubled. Among the diseases for the cure of which the wells of Wiesbaden have gained additional celebrity, deserve being ennumerated the famous *facial pain,* by Fothergill denominated: *Trismus faciei dolorificus,* and that excruciating *headake* called *Cephalalgia.*

As to the former disease, I have communicated in Ch. XIII. an account of several corroborative instances; respecting the *headake,* I take the liberty of subjoining a few remarks.

The wells of Wiesbaden may be reasonably expected to be resorted to with benefit both in the rheumatic and gouty, excrutiatingly painful, headake, as well as in that which arises from an injudicious use of mercury, — farther, in the headake of persons whose state renders it doubtful, whether it be owing to the latter cause, or continued by syphilitic disorders not yet completely exterminated. A continued use of mercurial remedies would, in this case, only contribute to aggravate the sufferings of the patient considerably, and to occasion additional ailments. In cases of this nature the water of Wiesbaden, by bathing in it, raises in a most surprising manner the deeply sunken faculty of reproduction, whilst, at the same time, a decoc-

tion of sarsaparilla is taken occasionally. This treatment reduces the headake, and, along with it, the painful tumefaction of the integuments of the bones of the scull, frequently accompanying it, and appearing now in one, and then in another part of the head.

It is no matter of doubt, that most other kinds of that dull cephalalgy, which, when it has risen to the highest pitch, is attended with a throbbing of the arteries, sometimes affecting one side of the head, and sometimes the whole of it, *have their seat in the abdomen, expecially in the liver.* The accesses are sometimes confined to regular weekly or monthly periods; frequently they are not, but take place in consequence of trifling causes, f. i. after slight fits of passion, after a fat meal, a. t. l. *).

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*) If persons that are affected with this *nervous* cephalalgia (as it is called), will observe one fundamental rule of diet, they will derive great benefit from it, even if they should not make use of our thermal establishments. It is the following: Let them take care never to allow two important systems of the body to get into action in too quick a succession, or simultaneously to enter into function too violently. This, however, takes place, when we, f. i. take our meals immediately after some violent exercise — are vexed at, or immediately after, a repast, read at table, strain our faculty of thinking and reflecting thus unseasonably etc. etc. Whosoever neglects this rule, in general, but especially

whilst using the mineral waters of Wiesbaden, is very liable to violent accesses of his sufferings.

This disease is generally hereditary. Most individuals that are affected with it, are cured here; though the pain should, as it sometimes happens, subside but very little in the beginning of the thermal treatment, nay, frequently grow more violent *). Notwithstanding this apparently unpropitous turn, *either a considerable amendment ensues*, encouraging the patient to a repetition of the thermal treatment, or *he is cured completely*. Patients of this class will derive great benefit from a few weeks stay in the country, after the conclusion of the thermal treatment, or, at least, from returning home by a circuitous route. The neighbouring *Rhinegau* presents many opportunities for the former purpose.

Cephalalgy is sometimes superseded, either during the use of our mineral water, or after it, by a slight herpetical eruption, or by arthritis — or hemorrhoïds, which till then had not existed, or been stagnant, begin to flow — accesses that frequently are the precursors of a complete recovery. These slight transition — sufferings I have frequently found to affect particularly persons that had long resided in the East- or West-Indies, and, labouring under the consequences of the malignant fevers, prevailing in those parts, or being affected with enlargements or schirrosities of the liver, spleen, or other abdominal disorders, came to our wells for relief.

An account of interesting cures of disorders of this description, which is preparing for the press,

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*) This is less frequently the case in that partial headake called *Megrim* than when the whole head is affected.

will, in addition to the cases detailed already in this work, corroborate what I have remarked on this subject.

Wiesbaden, March 1833.

The Author.

N. B. The numerous English families visiting our wells both in the summer- and winter-seasons, either for the purpose of making use of our mineral water, or attracted by the charms of the environs of Wiesbaden, will find the needful notices respecting its locality in the three first Ch. of this work. Having been applied to in behalf of many of such families to inform them whether Wiesbaden contained some proper institutes where children might be sent to for education, I avail myself of this opportunity to observe, that we have the advantage of two excellent schools for young ladies kept by Miss *Magdeburg* and Miss *Büsgen*, and two for the education of boys from 8 to 16 years, one kept by Mr. *Leyendecker*, and another by Mssrs. *Kries* and *de Larpé*, in which children are expeditiously taught the German and French languages, and instructed in all branches of knowledge that may be required by the higher ranks of society.

CHAPTER I.

Wiesbaden. — Site of the town. — Salubrity. — Climate. — Winter-residence for infirm persons and invalides from the north of Europe, especially such as are afflicted with disorders of the chest. — Great fertility of the soil. — Drinking-water. — Agreeable local conveniencies for strangers of superior rank. — The Opera-house. — Balls, concerts, private circles, — Literary resources, — the Casino, — the three booksellers' shops, the public library with its reading-room, — Gallery of pictures, — Antiquities, — Collection of natural curiosities, — Hotels, public tables. — Observation on the price of apartments. — Resort to this bathing-place in former times, and at present. — Wiesbaden is frequented more numerously than any other bath we know, excepting some watering-places in England. — Important observation and request.

WIESBADEN, the capital of the dutchy of Nassau, and the seat of the principal boards of administration, has a population of seven thousand souls, who are partly public servants, and partly artists, tradesmen and husbandmen.

Towards the north this town is surrounded by the mountains of the Taunus, which are gradually superseded by a fertile arable soil,

encompassing Wiesbaden on all sides as charming eminences. Of these the *northern* and *north-easterly* hills are the most considerable, sheltering our town against the cold north and north-east winds. The *southern* and *western* hills rise so gradually as only to break the power of violent tempests, without checking the free circulation of air.

Hence, the site of Wiesbaden is as congenial to health as it is favourable to the luxuriancy of vegetation, and improving the charms of spring and autumn. Many of the inhabitants come to a great old age, and there are several among them of fourscore, and some of ninety years, moving about briskly and cheerfully. Intermitting fevers are very uncommon here; nay, I have seen instances of persons afflicted with very obstinate quartan-agues, that had baffled all efforts of the sanative art, having recovered their health without the smallest aid of medecine, a few days after their arrival in our town.

The favourable site of Wiesbaden also renders winter much milder with us than it is in other, even more southerly countries; vegetation is already considerably avanced, whilst in our neighbourhood it is still checked by chilling north-easterly winds, and the trees preserve their verdure till late in November, when in other parts the cold northwind has stript already the trees of all their foliage.

We are amply indemnified for the, frequently oppressive, heat of summer by the mild temperature in winter, for which our town is as celebrated, as it is for the charms of its environs, in which nature vies with art. The beautiful *Rhinegau*, acknowledged to be the Paradise of Germany, begins an hour's distance hence, and considerably enhances the advantages peculiar to our town.

The hot springs, no doubt, contribute very much to produce the above mentioned temperature of the air, and this influence is felt very sensibly in the town. The part more contiguous to the mountains, in also less exposed to winds, the ground is warmer, and the temperature in it is in winter regularly 1—3 degrees higher than in the forepart of the town.

In consequence of these advantages of site and local influence, Wiesbaden, as well as the neighbouring Rhinegau, is frequently chosen for their winter-residence by *patients* and *other persons of a delicate constitution, with whom the climate of the north of Germany does not agree;* and in the eighteen years of my residence in this place, I have seen it frequented by numerous *patients using the bath*, and *even drinking the mineral water in winter.*

As our thermal springs, generally speaking, bear a great affinity to those of Pisa, with

this difference only, of being warmer and containing a greater quantity of fixed particles, so does our town resemble her southern sister in *protecting such as take refuge to it, against the hostile influence of the wintry season.*

The excellent soil of our environs abundantly produces whatever the senses of even an Epicure can desire. The cultivation of vegetables, for a long time rather neglected, has been improved considerably for some years past, and our tables are at present supplied with exquisite sorts of greens; the northern and western hills yield the most delicious fruits, and grapes and sweet chessnuts thrive in abundance even at a considerable hight above the town. Game and venison may be procured frequently in abundance, and the Rhine supplies our tables with the most delicious sorts of the finny tribe. Sweet water for drinking was scarce formerly in many parts of our town, because, as I schall observe more at large in another place, most wells partake of the nature of our mineral springs, palpably betraying an admixture of saline particles. However, owing partly to the munificence of His Serene Highness, the reigning Duke, and partly to the voluntary contributions of the inhabitants, several powerful springs, issuing on the *Platte,* an eminence situated about two leagues distance from here,

whose water is nearly as pure as distilled water, were in 1821 conducted into the town. They yield sufficient water to supply ten fountains.

Wiesbaden is gifted with whatever can cheer the life of persons of refined manners, and satisfy all reasonable wants. The charms of a richly gifted nature, diffused over the contiguous and distant environs, are here beautifully blended with the productions of art. Sick persons will here find all conveniencies they may want; such as are only indisposed, may gratify every demand of refined sense, and such as are desirous of enjoying the pleasures of life, may command a plentitude of refined gratifications, over and above the charms of immediate social intercourse: each season contributes its individual share.

The beautiful Opera-house, newly erected, and shut up only for six weeks in a twelve month — in the harvest-season —, weekly attracts three times the lovers of the mimic art. Music, actors and decorations generally are excellent; and operas, in which frequently great artists appear on the stage, are preferably performed in the summer-season. Many private concerts are, besides, given in the bathing-season.

Splendid balls, at which both the admirers of Terpsychoré and the lovers of gaming and good cheer are wont to indulge them-

selves, are given every sunday and wednesday, during the season.

The same entertainments take place in winter; though, as may be expected, on a reduced scale. Concerts and balls are then given in the beautiful saloons of the *Eagle*, the *Four Seasons*, the *Archers' Court* and in the assembly-room. Besides these, private circles are formed by the inhabitants of superior rank, to which strangers are invited.

The latter are also admitted to the meeting-rooms of the Casino-society, and to the reading-room attached to them. This room is always open and contains chiefly political news-papers and journals. There are, however, at the same time many literary gazettes to be found there.

Gentlemen requiring more ample literary information, will find it in the shops of the booksellers Ritter, Schellenberg and Hassloch, and in their well-furnished circulating libraries.

Besides these, there also exists here an institution exclusively literary, in the *Landesbibliothek* (public library), as it is called, established by government, for general gratuitous use, which is kept up from the proceeds of a considerable fund. The library belonging to it is put up in the new palace, an excellent locality, and, though founded only a few years ago, is enriched already with 40,000 volumes. Strangers giving a re-

ceipt, may obtain books from this library, and have free access to the reading-room belonging to it, in which the better literary papers and scientific periodical publications are open for inspection. The library is rich in incunables and old manuscripts, amongst which the *visiones Sanctae Hildegardae*, a codex ornamented with beautiful miniature-pictures, of the 12th century, with an highly remarkable vocabulary of the language of visions, deserve particular notice. The most interesting literary publications of the day are also to be found there.

In this place you will also find a collection of paintings and of antiquities. The latter, many of which were found in the dutchy of Nassau, are well worth seeing. Although the collection of paintings is not of long standing, the connoisseur will be delighted to behold in it several works of *C. Maratti, Dominichino, Perugino, Pietro de Cortona, Francesco Albani, N. Poussin, Hamilton, Holbein, A. Dürer, Lucas Cranach, Hemelink, Ruysth, Ph. Wouvermann, Salv. Rosa, A. Braun, W. Kobell* etc. etc., and it is not improbable that this collection also contains a genuine *Raphael*.

The Museum of antiquities, exhibited in the same place, is worth seeing. It contains a collection of greek and roman coins, many urns and vessels used by the Romans for domestic purposes, such as: glasses, Etrurian vases, interesting bronzes, antique gems and cut stones;

farther: busts, basrelieves and marble statues, among which a *Mucius Scaevola* is esteemed an highly valuable work of art — a collection of lapidary inscriptions, and larger monuments of stone. Among the latter a *Mithras-altar*, esteemed one of the most finished works of this kind, on account of the copiousness and import of the representations, is particularly remarkable, and was found in 1825, together with other monuments of the roman age, at Hedernheim (*castrum Hadriani*), situated a few hours distance from Wiesbaden, and once a flourishing colony of the Romans. The sculpture is the workmanship of the better period of the art.

Many of these antiquities were discovered at Wiesbaden and in its environs, and this collection is supplied liberally by the society of Nassau-archaiology, history and physical researches, existing since 1821.

The hotels distinguish themselves very advantageously by their arrangement and the manner in which strangers are received and treated in them. Of those that have no hot springs, and in which, of course, bathing regularly is not practised at all, or performed only in tubs, the *Nassauer Hof* (court of Nassau), the *Friedrichsburg*, the *Einhorn* (unicorn), the *wilde Mann* (savage), and the *Stadt Frankfurt* (city of Francfort), are the first.

Several of the principal bathing-houses are also hotels, lodging strangers and keeping pub-

lic tables (ordinairies). These are: the *Adler* (eagle) [where the post-office is], the *Schützenhof* (archers' court), the *Rose*, and the *vier Jahrszeiten* (four seasons).

At these tables, as well as at those of the hotels properly so called, our guests sit down to a comfortable meal of eight and more dishes, where the gratification of the palate unfortunately supersedes the care of health, and many a one is unmindful that the use of mineral water, the medical regimen and the disease prescribe rules totally different from those dictated by the palate. The enjoyment of these meals is seasoned by music, the performers of which, furnished by the neighbouring Mayence, and even by the distant Bohemia, stay with us while the season lasts.

Dinner is served at one o' clock, and the price of it is from 30 kreutzers to one florin (10—20 pence). There are, however, many guests who prefer dining in their own apartments, to which four well dressed dishes are sent them for 20—30 kreutzers from the cooks in the town, who are exclusively occupied with dressing dinners for out-of-door customers.

In most hotels you may sup by the card at any hour, and choose what dishes you like best. There are, however, many strangers who prefer partaking of a collation in one of the pleasantly situated restaurations out of town.

Breakfast is commonly served in your own

apartment, unless you should prefer taking it in company, or in the open air, after having drunk the water, ar bathed.

The situation of Wiesbaden enables strangers to procure the most excellent wines at moderate prices *).

The rent of apartments is here, in comparison with other bathing-places, very reasonable, being regulated by the different periods of the season, the situation and fitting up of houses and apartments. In June and in the first half of August, when the concourse of strangers frequently is so numerous that scarcely a vacant nook can be obtained, the price is generally raised one third.

Resort to this Bathing-place.

Wiesbaden held an important rank among the german bathing-places already in the remotest times, although the bathing-houses were but paltry and fitted up meanly, not at all answering the demands of a medical regimen. It was, however, frequented chiefly by the inhabi-

*) In the north of Germany old and mellow wines are preferred, whilst with us young and fiery ones have the preference. In consequence of this predilection, the latter sort is commonly put before you at table, with which the northern Germans are not always satisfied. Therefore, if you do not like young wine, you must expressly order some of an older growth.

tants of it's neighbourhood only. Within the last twenty years, however, consequently after the introduction of a proper treatment of chronical disorders, the proportion of visitors encreased considerably. The powerful efficacy of the water of Wiesbaden in disorders of the abdomen was gradually priced properly, after its sanative power in cases of gout, rheumatism and chronical exanthemata had long been generally acknowledged. The number of visitors now encreased in rapid progression; the bathing establishments were enlarged and improved, and new ones of extraordinary extent erected. The ducal administration, being sensible of the demands of the age, aided them most liberally and generously. Charming promenades were created in the environs of Wiesbaden, the *Cursaal* (pump-room), serving the genteeler class of strangers for a rendezvous, and the equally grand colonnade (a bazaar constructed in the oriental style) erected contiguously to it. The most powerful hot spring, the *Kochbrunnen* (scalding-well), as it is called, has been enclosed tastefully, and surrounded with promenades, whilst some physicians have communicated to the public the results of their observations. In consequence of these united seasonable aids, these mineral springs attract at present such a multitude of visitors, as renders Wiesbaden the most frequented of all known bathing-places in Europe, perhaps only a few watering-places in

England excepted. The number of visitors resorting at present to our town, annually amounts to, at least, **10,000**, whilst, perhaps, more than **15,000** stop here for a longer or shorter period, merely for pleasure. Besides these visitors, the most distinguished individuals of the neighbouring towns of Mayence, Francfort, Darmstadt, and of the Rhinegau crowd to this place on the fine sundays of summer. Whoever considers this, will conceive how lively Wiesbaden must be during the bathing-season *).

Bathing-establishments.

Some of the bathing-houses have springs belonging to them, whilst others share among them the water of some copious one. The *Kochbrunnen* (scalding well) is one of the first of the latter class, supplying the *Blume* (flower), the *Rose*, the *englische Hof* (court of England), the *schwarze Bock* (black he-goat), the *Engel* (angel), the *Schwan* (swan), the *Ross* (horse), the *Römerbad* (bath of the Romans), and the *Hospital*.

The hotel to the *Spiegel* (mirror), situated between these, is supplied by a spring of its

*) This is not, however, detrimental to the conveniency of the sick, and such as are in good health and fond of solitude, are enabled by the variety of promenades to lead the life of anchorites.

own, issuing within a few steps of the Kochbrunnen, from which it does not differ in quality.

The large hotel and bathing-house to the *Adler* (eagle) has the advantage of a copious open spring belonging to it, which also supplies the *Bären* (bear), the *goldene Brunnen* (golden fountain), and the *Krone* (crown).

The *Schützenhof* (archers' court) and the *Gemeinbad* (common bath), too, as well as the *Reichsapfel* (imperial globe) and the *Stern* (star) have springs in common.

Other bathing-establishments have springs of their own, issuing at a smaller or greater distance from them. These are: the *vier Jahrszeiten* (the four seasons), the *Kette* (chain), the *zwei Böcke* (two he-goats), the *Sonne* (sun), the *Rebhuhn* (partridge), and the *halbe Mond* (half-moon); the latter two being jewish bathing-houses.

One of the main springs, of which no use had been made for 275 years past, and whose existence had become entirely unknown, was discovered again by accident in 1820. One of the two public springs having been assigned to Mr. *Zais*, inspector of public buildings, he made choice of the upper Kochbrunnen, and his labourers were occupied in clearing it and removing useless supplies. When digging, the above mentioned spring of 61° R., provided with a frame that was in excellent preservation, was discovered. It probably is the very same

that supplied the ancient *Neubad* (new bath) with water. *Dr. L. von Hornigk* reports of it that that bathing-house, having been burnt down in 1545 the well had been covered in anew, and a barn built upon it *).

This spring belongs at present to the bathing-house to the four seasons, and, as for copiousness of water, is accounted the fourth main spring of Wiesbaden.

The *Hospital,* founded by emperor *Adolphus* of Nassau, derives the water of its baths from the Kochbrunnen, and in former times was a very considerable establishment, possessing very large revenues. In 1732 the present house was built of freestone, and in 1818 appointed to be appropriated chiefly to the accommodation of *poor* patients. This building has been considerably enlarged of late years, and is now properly provided with whatever such an establishment, as an hospital and bath, may require. Foreign charitable institutions also have here foundations for the benefit of their poor, and

*) *Wiesbad sampt seiner wunderlichen Eigenschaft, herrlichen Kraft und rechtem Gebrauch, durch Dr. L. v. Hornigk etc. Frankfurt a. M.* 1637.

In the second edition of this treatise, which, however, I do not possess, the author treats more at large of this spring, comparing it with Ems etc. The conduit of this spring, discovered by Mr. Zais, disappears beneath dwelling-houses, whence this original spring is still as unknown as the spot on which the late *Neubad* was situated.

send their indigent patients to this place from May to October. Other poor strangers are likewise received here, being gratuitously provided with lodging and bathing, and paying but a trifle to the establishment for their maintenance. Some hundreds of patients are taken care of in this establishment in the course of every bathing-season, and are to be attended by the *bath-physician*.

Adjoining the *Schützenhof* in the *Gemeinbad* (common bath), appropriated to the admission of journeymen and servants, who may bathe there at all times, at the price of one or two kreutzers. Its internal regulation is very proper, and it is the laudable scope of this establishment, to promote cleanliness and the use of baths as much as possible among the lower classes of the community.

Arrangement of the Bathing-establishments in general.

Each bathing-house contains *one*, — but some of the larger ones are provided with two, roomy bathing-halls, to which you may proceed directly from your own apartment, without exposing yourself to the injurious influence of the air. There are many dwelling-rooms from which you may descend directly into the bath, or where the latter is in a chamber provided with a stove, which precludes the possibility of catching cold in winter, whilst using the bath.

The bathing-hall, or saloon, contains on either side of its longitudinal diameter a range of baths separated by high partitions of boards, or thin walls, which you enter by a door that may be bolted in the inside.

In the bathing-house to the Vier Jahrszeiten each bath forms a chamber which is completely secluded and elegantly fitted up. Many of these chambers are provided whith stoves for bathing in winter, and you descend to them by an easy pair of stairs.

The bathing-house to the Adler likewise contains a range of such comfortable chamber-baths, cheerfully fitted up and provided with stoves, together with a bathing-hall newly fitted up and supplied and furnished with the requisite apparatus for taking the *Douche*-bath. This hotel contains, besides, underneath its uncommonly fine saloon, which is ornamented with eigt marble columns of the doric order, a range of most elegant detached baths, built but five years ago and provided with all requisite conveniencies, and, whilst writing this (1830), this house is receiving, in a detached saloon, lit from above by a round cupola, many new bathing-cells. The most important balneotechnical improvement, however, this excellent establishment may boast of, is a cooling-apparatus, by means of which the baths may at any time be reduced to whatever degree of temperature the case of the patient may require. Every

morning and evening the most select company use to meet at the drinking-well of this house. The Schützenhof, too, contains several bathing-closets of the above mentioned description. The conduit conveying the hot water, opens in each bason, and may be shut or opened at pleasure by the persons bathing, or their attendants. This contrivance, considered in a therapeutical view, is evidently most proper, because it enables the patient, as Dobbereiner spiritedly observes, „to keep himself in immediate connexion with that great galvanic chain, from which the spring derives its existence and sanative quality."

Besides the common shower-bath, some of the larger bathing-houses are also provided with jetting-, douche- and rain-baths, sending down, if required, a weaker or stronger jet of water from a height of 20—30 feet. In some establishments there are also, besides these, portable douche-machines to be had, producing a more intensive effect, and throwing the jet upon the body in whatever direction it may be required. There is also in the *Vier Jahrszeiten* an ascending douche-bath, all bathing establishments being provided with very well arranged vapour-baths, fitted both for general and topical application, and many of them, with very efficacious vapour-douches *).

*) The ingenious and very proper construction of vapour- and douche-baths we owe to Mr. *Kiehm*, the architect.

There are also conveniences for taking sulphurous baths. Not all establishments possess the advantage et reservoirs for cooling the baths. Some attempts that were made to construct such reservoirs miscarried, because in that part of the town where the hot springs issue hot water spouts forth, as soon as the ground is laid open. Neither were such aids hitherto absolutely required, on account of the great number of detached baths, especially since even in the hottest days of summer the water is reduced in six or twelve hours to the temperature required, and the patient never runs the risk of bathing too hot, even if he should have the water drawn off in his presence, provided the inspector of the bath do not neglect the proper precautions.

There are at Wiesbaden above 700 bathing closets, which are encreasing annually, and only in the bathing establishments properly so called above 900 apartments expressly fitted up for the accommodation of bathing visitors. The introduction of cooling-reservoirs has enabled some first-rate bathing establishments to make a repeated use of each reservoir in the course of the day.

There are, besides, many private lodgings fitted up, and provided with the requisite bathing apparatus, for the accommodation of strangers whose infirmities and habits require a more quiet circle.

Before I conclude this chapter, I must add a *very important* observation and request.

In the above observations on our bathing-establishments I purposely forbore entering into a minute criticism of each individual bathing-house, because I apprehended, not only to tire the patience of my readers, but that the praise bestowed upon *some particular* bathing establishments might injure the owner of some new one less recommendable, however desirous he might be of improving it gradually as much as possible.

I cannot, however, in candour forbear observing *that there is a material difference in our springs with regard to their individual efficacy.* The spring A, for instance, in some disorders proves injurious to the nervous system of the patient, whilst the spring B would soon have afforded him relief and restored him to health. One spring injures the beauty of the skin, whilst another, from the softness of its water, is reckoned to be an innocent and efficacious cosmetic. The case of another patient requires a very intensive and powerful water, but from accident or want of proper information he makes choice of a bathing-establishment whose water is not sufficiently efficacious, whence he will be detained longer than he desires, or risk leaving Wiesbaden without having obtained the desired relief.

I have, farther, to observe that the cure of a patient very often materially depends upon

the arrangement of the house, especially upon the apparatus for applying the water. A bathing-hall filled with hot vapours not rarely causes spitting of blood in delicate constitutions, or in persons disposed to consumption (*architectura phthisica*), or in such as are of an apoplectic habit, even worse consequences. Another disorder demands more powerful natural vapour-baths, shower- or strong douche-baths; some patients require a sunny apartment, others a cool one etc. etc. Now it frequently happens that uninformed strangers hire lodgings in a house deficient in the very requisite upon which their cure chiefly depends; for there are still several bathing-houses in this place not so satisfactorily furnished with the technical conveniences required as might be desired. The sufferer, consequently, is reduced to the disagreeable alternative either to stay in inconvenient apartments and to hazard the success of his cure, or to annul the contract concluded with the owner, and to look out for more convenient lodging, which is attended with a great deal of trouble and other disagreeable consequences, whilst, at the same time, it is highly painful to the physician who finds himself bound in duty to propose a change of lodging; for the owner of the bathing-establishment views it as a disgrace to his house. In order to prevent such inconvenient reactions, I beg leave to suggest the subsequent earnest request:

1) That strangers never would engage a lodging upon the single recommendation of persons unacquainted with the principles of the medical art, though they should have inhabited it themselves;

2) that, *on their first arrival at Wiesbaden, they would not alight at a bathing-house, or at an inn with which a bathing-establishment is connected, but at an hotel not provided with baths.* Such are: the *Friedrichsburg,* the *Einhorn,* the *Nassauer Hof,* the *wilde Mann* and the *Stadt Frankfurt.* Having alighted at one of these hotels, I would advise them to send for the physician under whose direction they intend to use the mineral water, and, after having fully acquainted him with their case, to leave to him the choice of a lodging. The patient then may be removed in a few minutes to apartments suited to his wants, and be sure that his physician will take care of his being treated well.

N. The letter-post goes regularly every day at noon and in the evening. There is no want of stage-coaches and diligences. Hackney-coaches are also going, in the bathing-season, every day, to Francfort, Mayence and the Rhinegau, at moderate fares. Carriages for single persons may also be had at any hour.

CHAPTER II.

Environs of Wiesbaden. — The Colonnade — the Cursaal (pump-room) — its internal arrangement — statues — destination of this building — its environs — Plantations on the road to the Dietenmühle, the ruins of Sonnenberg, and the garden of Schulz. — The Nerothal (valley of Nero) — Leichtweiser Höhle (cavern of Leichtweis). — The Geisberg (goat's mount). — The cloister of Clorenthal. — Pheasants warren. — Chausseehaus (half-way-house). — Adamsthal (Adam's valley). — Fulling-mill. — The Platte and hohe Wurzel (high root), as it is called. — Mosbach, Biebrich. — Schierstein. — Mayence. — Schlangenbad (serpents'-bath). — Schwalbach.

Trip to the Rhinegau, by water or in a carriage. — Bingen — Mount Rochus. — The Niederwald. — Rüdesheim — Johannisberg. — Reichartshausen — Rauenthal. — Kiedrich — Eberbach and the Steinberg.

Excursion to Hochheim — Weilbach — to little Switzerland and the Feldberg.

The latest artificial embellishments of the immediate environs of Wiesbaden begin beyond the eastern part of the town. Connected with these is the drinking-well, forming a grand ensemble calculated for sanative purposes.

On the *right side* of the drinking-well *(Curbrunnen)* the wanderer steps into avenues of platanus's, acacia- and linden-trees, in the pleasant shade of which he may proceed to the *Colonnade,* lately built, and the *Cursaal* (pump-room), whose beautiful columns attract his attention from a great distance.

The *Colonnade* *), a porticus resembling an oriental bazaar, is 500 paces long, and contains about 60 shops, in which objects of art and other articles of luxury are exhibited. The front is supported by 46 colossal columns of the doric order, and the two ends are terminated by two spacious pavilions. A very frequented fair is kept in this hall in summer, whilst, in winter, it affords a very pleasant promenade in rainy weather by protecting the walkers entirely against the influence of the atmosphere.

Proceeding a few steps from this bazaar, you enter the *Cursaal,* whose beautiful porticus is supported by 24 doric and 6 jonic columns. The facade of the entrance is adorned with this simple inscription in the lapidary style: *Fontibus mattiacis* MDCCCX. — A beautiful meadow, enclosed on either side by avenues of platanus- and linden-trees, forms the foreground, thus exhibiting in charming perspective relations that splendid building, in

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*) It was built by Mr. *Zengerle*, architectural counsellor, in 1825 a. 1826.

which the beholder, viewing it from this point, cannot but discover a spirit of classic antiquity *).

The large saloon, which you enter by a beautiful porticus, lies in the middle and communicates with several adjoining saloons of smaller dimension and with assembling-rooms, in which parties use to meet for the purpose of conversing, eating, drinking and gaming. This saloon is **130** feet long, **60** broad and **50** high. A corridor, ornamented with beautiful stucco runs along the longitudinal sides of the hall and joins the beautiful, though plain, ducal state-box, which is composed of several tasteful closets. Both the latter and the corridor are supported by **28** large marble columns of the corinthian order. The niches in the lateral walls are ornamented with statues and busts of cararian marble, excellently copied from antiques. The niches in the right wall, as you enter, contain the following works of art:

A whole length figure of *Diana*, beautifully executed.

A bust of the same goddess.

A *bathing Venus.*

A bust of *Menelaus.* Viewing this godlyke head of the hero, which is highly finished, we fancy to be reading the Iliade.

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*) Mr. *Zais,* inspector of buildings, built it in 1808—1810.

Hebe with a bowl of nectar. An excellent work! The losely floating drapery is admirable.

In the niches on the left hand:

Apollo of Belvedere, a whole length figure, made by *Ghinard* at Rome for the late minister *Vergennes*. It may justly be pronounced to be the best executed statue of the whole collection, in as much as it strikingly betrays the artist's endeavours to produce a most uncommon performance.

A *bust of Apollo*.

A fine copy from the *Medicean Venus*.

An excellent bust of *Achilleus*.

Bacchus with a bunch of grapes, „representing the picture of a lovely youth, in the fairest bloom of life; the forms are full, soft and youthful, as if gently breathed upon the marble. He leans against the trunk of a tree wreathed with vineleaves; his countenance sparkles with joviality, whilst, in a state between waking and sleeping, he is visited by some pleasant dream *)."

Some other excellent statues are exhibited in other places of these saloons. They are no less remarkable than those enumerated above, and were all of them executed by French artists for *Napoleon's* mother, but, owing to the

*) *Wiesbaden und seine Umgebungen, von J. P. Zimmermann.* Wiesbaden bei *Ritter*, 1826. S. 56.

fatal reverses that befell him, never reached their original destination, finally becoming the property of this establishment *).

The internal arrangement of this hall corresponds with the beautiful exterior, and the whole is impressed with the stamp of a mind fitly and beautifully conceiving the aptness of each component pact. The eyes of the beholder are nowhere offended by the view of outhouses and other appertenances indispensible in so large an establishment, altho' these are not wanting, but abundantly and fitly applied in the interior, but so skillfully concealed and distributed as to afford a very honorable testimony of the ingenuity of the architect, who was capable of producing an edifice offering the choicest enjoyments without being lumbered with those appertenances that but too often prove an eyesore to the beholder. No bathing-place in Germany can boast of such an edifice.

This hall is resorted to by great numbers for the purpose of breakfasting, dining and supping together, or beguiling the tediousness of time by social games. Splendid balls are given here each sunday and wednesday to the inhabitants and numerous visitors from the

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*) Of some of these works of art, we might, however, say with Virgil: *obscoenae volucres!* and reply with Horace: *hic non erat locus!*

neighbourhood; travelling musicians exhibit their skill; and in the vernal and summer-evenings, which are particularly fine here, numerous parties assemble on the plain adjoining this hall, to take tea and other refreshments, whilst from the shore of the small lake, over whose smooth surface light gondolas are skimming, the pleasure of the charming hours is inhanced by the sweet tunes of an excellent band of music. Each forenoon, too, you are invited to the colonades of the *Curhaus* by the dulcet harmony of well assorted wind-instruments; you then may breakfast in the adjoining saloons, form new connexions, and make appointments for excursions in the afternoon. Lovers of billiards and games at hazard have here constant opportunities to amuse themselves in their own way.

The plantations on the opposite side of this hall will delight every lover of the beauties of nature. Paths variously entangled and small striking views entice you through bushes of jessamine and roses and rich exotic plantations along the banks of a small lake and a murmuring brook, to the much frequented *Diethenmühle*. There great numbers use to meet in motly groups in the afternoon and evening, and the jovial borderers of the Rhine, so fond of singing and dancing, are accommodated with a pretty good saloon, where they may carol and skip about as much as they

please, a band of music performing here several times in the course of the week.

From this mill you may proceed by uncommonly beautiful plantations to the picturesque ruins of the castle of *Sonnenberg,* whose founder has left us the remains of a gigantic fabric of remote ages, of which, however, no satisfactory historical record is extant. Mention of it is made in history as far back as the 12th century. As a fief of the electors of Mayence it reverted to the counts of Nassau, who, in their numerous feuds with the dynasts of Eppstein, fortified and enlarged it considerably, in consequence of which it became, especially under emperor Adolphus of Nassau, a strong fortress. In the thirty-years war it was besieged and partly laid waste by the Swedes, and in the end of the 17th century almost completely destroyed by the French.

From the platform of this castle, to which you ascend by very easy paths, you have, in a southern direction, a charming view of the Rhine; and in the north your attention is attracted by the church of Rambach, to which you may proceed through a lovely valley, in the cooling shade of young beech-trees.

If you return by the village of Sonnenberg, you may refresh yourself there, as is usual, in the garden of *Schulz*, where you have the most charming view of the ruins of the castle, especially when the moon is full. Returning

in the cool of evening, I would advise you not to proceed again by the plantations of the valley, but either to cross the mountains on your left, which afford some charming prospects, or to strike into the high-road, which also is not destitute of charms.

From the left of the drinking-well a beautiful avenue of acacia-trees takes the wanderer to the much frequented *Nerodale* no less distinguished by its vine-hills, luxuriant vegetation and charming lateral dales, than by its natural shadowy walks formed by young oak- and beech-trees, and the romantic groups of rocks, decorating its background, where they form the *Leichtweiser Höhle*, a cavern deriving its name from a famous poacher of ancient times, who kept himself concealed there. Within a short distance from the entrance to this valley, a very good restauration is frequented by numerous visitors, both in the morning and in the evening. On the top of the *Neroberg* (mount Nero) you have a charming view of the Rhine, of Mayence and great part of the fertile districts bordering on that river.

The *Geisberg* (goats'-mount), about a quarter of an hour distant from here, has held a distinguished rank, these many years, among the places of amusement in the environs of Wiesbaden, and on certain days in the week is resorted to by crowds of visitors, partly walking, and partly mounted on asses or conveyed in

carriages. Such as are averse from mixing with these motly groups, may proceed thither on days when these cavalcades do not take place, and the beautiful prospect that spot affords, the fine garden and the charming environs, together with the conveniency of a good restauration, will amply indemnify them for the trifling trouble of ascending this mount.

Before you leave this mount, you should take a view of the large and uncommonly beautiful weeping-oak (*quercus ruber Lin. varietas ramulis pendulis)* standing behind the house.

The high-road to Schwalbach takes you to the late nunnery of *Clarendorf,* founded by emperor *Adolphus of Nassau* and his consort *Imagina,* and beautifully situated. The meadow-ground on which it stands, contains in its most retired and charming part the late pheasants' warren, extremely well calculated to allure the lover of the pleasures afforded by the charms of unadorned nature. The view you enjoy on this spot is one of the most charming all around. Beautiful hills overgrown with wood and fine plantations of fruit-trees stretch along either side of an extensive luxuriant meadow-ground, beyond which Mayence, Hochheim with its celebrated vine-hills and the Bergstrasse occupy the space before you, interspersed by high poplars, whilst the wood is edged with dark green pines and you descry here and

there many ancient german tombs, some of which are opened already *)! —

Should you feel inclined to continue this excoursion yet farther, you may proceed, by the beautiful shadowy forest-road towards the *Chaussechouse* (half-way-house), at which you will arrive after a quarter of an hour's walk, when you may rest yourself in the silent wood, and take some homely refreshment, seasoned by the fine prospect before you.

You may, however, also, proceeding from the pheasants' warren, strike into a road stretching towards north-east, which takes you to the lonely *Adamsthal*, a pleasant farm, and the fulling mill (*Walkmühle*), which is visited by great numbers from Wiesbaden, especially on sundays. You may have refreshments in either place.

Few lovers of the beauties of grand and rich natural sceneries neglect visiting the *Platte* and the *hohe Wurzel* (high root). They form the highest points of the Taunus-mountains around Wiesbaden. Intending to be more particular, in the subsequent chapter, in describing the surprising view these eminences afford, which may safely be esteemed one of the most exten-

*) A wanderer, conversant with the ancient classics might be reminded here of these impressive words of Horace:

— *moriture delli* —
linguenda tellus et domus et placens uxor!

sive and grand in all Germany, I shall here mention a few localities only.

The ducal hunting-castle, situated there, was built in 1823 — 1824, and is very well worth seeing. Although it commands many miles of the environs, it is less striking on account of its exterior, than on account of its excellent and ingenious internal arrangement. A light double flight of stairs, receiving their light from the top, takes you to the apartments of the first floor, which are inhabited for some weeks in the year by the beloved family of our duke. I would advise you not to neglect viewing from the uppermost story of this building the grand prospect laid open there before the eyes of the astonished beholder.

Opposite to this castle there is a very good restauration, where plain refreshments may be had at all times.

The latter part of the afternoon is suited best for this excursion, which is daily performing by large numbers, on foot, as well as on horse- and ass-back, and in carriages.

On the south-side you are tempted to a short trip by the neighbouring *Mosbach* and *Biebrich*, the residence of our beloved sovereign, the beautiful park, with its castle built in the style of the ancient chivalrous age, and ever open to the curious visitor. This is a lovely romantic party. The prospect from the battlement of this castle is peculiarly delightful, and

should be enjoyed at the time of a clear sunset. The beholder fancies himself to be transported to the charming regions of southern Italy.

A fine avenue of fruit-trees leads to *Schierstein,* about a quarter of an hour distant from Biebrich, situated on the bank of the Rhine in the midst of a grove of fruit-trees. It is considered the gate of the Rhinegau, the theme of many a sweet song, and by a pleasant short cut connected with Wiesbaden, whence it receives numerous visitors.

In an oblique direction opposite Biebrich, you descry the ancient and eventful Mayence, with which but few german cities can be compared. Reserving my observations on its historical relations for the subsequent chapter, I shall here note only briefly, what may particularly interest you there on short excursions.

The town-library contains about 90,000 volumes, and among these many ancient prints. This library is connected with a museum for works of art and antiquities adorned with many excellent paintings by Annibal and Augustine Caracci, Pietro Vannucci, Jacob Jordanus, Albrecht Dürer, Holbein, Lucas v. Leyden, Johann Rottenhammer, Gerhard Lairesse. The cabinet of antiquities, consisting of objects dug out in the neighbourhood, includes an historically interesting collection of roman altars and votive stones.

A roman burying-ground before the new

gate (*Neuenthor*), at the south-side of the town, on the road to the village of Zahlbach, contains many remarkable roman tombstones, exhibited on the spot where they were found, between two weeping-willows. Not far off you behold the large roman aqueduct, reported to have been built by *Drusus*, and in the citadel near by, the monument erected to his memory, according to Suetonius' account, by the roman legions. Its form resembling the shape of an acorn, it received the denomination of the *Eichelstein* (acorn-stone). The battlement of this fort commands a most charming view, as also does the *neue Anlage* (new plantation), as it is called, where, previous to the french revolution, the magnificent summer-residence of the electors, in the centre of a celebrated dress-garden, was situated. The fashionable inhabitants of the town and of its environs meet here twice a week, to hear the beautiful prussian and austrian military music, and numerous crowds flock to this spot from Wiesbaden, to spend there some hours in the enjoyment of the pleasures prepared for them by art and nature.

Mayence may boast of some fine churches and other architectonic monuments. The beautiful cathedral, which bears the marks of its being the work of six different centuries — having been materially injured by fire many times — was founded by archbishop Willigis in 978. Its arches, supported by 56 huge

pillars, together with the two choirs and the richly ornamented altars and lateral chapels, afford an imposing aspect.

You, farther, behold there a range of remarkable tombs, and among these that of the famous *Fastrada*, consort of emperor Charles the Great that of the celebrated singer of female beauty, *Henry* of *Misnia*, called *Frauenlob*, who died in 1318 and was carried to his last home by some noble ladies of Mayence. Both tombs were materially injured in the course of the revolutionary war. Visiting this church, you will also be directed to take notice of the fine ancient baptistery of bronze with figures in relief, representing the 12 Apostles, the holy Virgin, and St. Martin on horseback, of the 14th century, presented by archbishop Willigis to the church of our Lady, which was destroyed in the revolution, with the patent of archbishop Adelbert, of the year 1128, engraved upon its margin.

Besides the cathedral the following churches deserve the stranger's notice:

St. Ignatius church, with a beautiful altar-piece;

The Augustines', with a plafond beautifully painted;

St. Peter's church, with excellent sculptures and a painted plafond.

St. Stephen's, built by archbishop Willigis, St. Christopher's and St. Quintin's are

remarkable rather on account of their age than for any particular monument of art.

For longer excursions, so highly salutary to persons using the water of mineral springs, the environs of Wiesbaden offer numerous opportunities. *Schlangenbad*, and *Schwalbach*, two celebrated watering-places, the former having a pleasant lukewarm, and the latter a copious cold chalybeate spring, and being separated by a distance of only 2 ½ or three hours' ride, are visited by numerous parties in *one* day. They commonly proceed in the morning to Schwalbach, where they dine, and return by Schlangenbad, on which tour they have the advantage of a beautiful view of the Rhinegau.

One of the most delightful excoursions from Wiesbaden is that to the Rhinegau, abounding in wine and songs, and justly denominated the *Paradise* of *Germany*. Some parties make this excursion by water, either in the steamboat, that goes four times in the week down the Rhine, or in the ordinary yacht sailing from Mayence every day. Larger parties hire a boat for their particular use to Rüdesheim, and go on shore at the most interesting spots of the islands of the Rhine (for instance, at the charming island of count Westphal, affording a delightful view of the river and its enchanting banks). Many persons confine this excursion to Bingen and Rüdesheim, where

they go on shore, to visit the remarkable places of wich I shall speak immediately, proceed to Rüdesheim, to dine there, and return the same day, taking Geisenheim, Johannisberg etc. etc. in their way. Rüdesheim is only five leagues distant from here.

Other parties prefer going in the steam-boat as far as Coblence, where you arrive already about noon, and have time enough left for viewing that pleasant town and its charming environs. Having slept at Coblence, you may return the next morning by another steam-boat, which, going up the river, and, consequently proceeding at a slower rate, enables you to enjoy at your ease this Paradise of Germany, which presents to you new charms in all directions.

The most frequent excursions are, however, made by land to Rüdesheim, where one of the best sorts of rhenish wines is grown *), and to Bingen, situated on the opposite bank of the river and built by the Romans. The parties set out early in the morning of a day that promises not to be too hot, and arrive at Bingen a few hours after. Traversing this finest part of the Rhinedale, whilst you behold

*) Many a pipe of this wine, of the best growth, has been sold for 16 to 20 thousand francs and more.

on one side the green surface of the charming river, and on the other luxuriant vine-hills crowned with thick woods, and interspersed with cheerful villages, little towns and innumerable country-houses, your mind is impressed with the picture of one of the finest countries, inhabited by an happy race.

Many persons cross the Rhine at Rüdesheim, in order to view the lovely Rhinegau, from the left bank. For this purpose they visit a charming garden and mount, *Rochus*, an eminence about a quarter of an hour distant. Near the church that stands upon it you have a wonderfully beautiful prospect of that charming country. You should not neglect seeing a very ancient picture, hung up in this church, which represents St. Hildegardis in a visionary trance, and some incidents of her life, — nor a modern picture presented by our celebrated Goethe, as a memorial of his visit to this interesting spot. Then you may return to the right bank of the river by crossing the whirlpool, formerly an object of terror to the passenger, but now considered as void of all danger, and caused by the Rhine being confined betwixt huge rocks from this spot to the road which, between Assmannshausen *) and

*) Here grows the german Burgundy, which, however, is much stronger than that of France.

Rüdesheim, leads to the Niederwald, and struggling to overcome the obstacles that confine its passage. A path in many places very steep now takes you up the mount, where you are protected against the scorching rays of the sun by the foliage of a young beech-forest. Having visited the small castle built by a count of Ostein 55 years ago, you are pleasingly surprised by the *Rossel,* as it is called, the *enchanted cave,* the echo of many syllables, the hermitage and when arriving at the temple, you approach the celebrated vineyards, and traversing them, your paces are quickened by the expectation of the refreshments offered by the restauration which then is close at hand. The prospects from the *Rossel* and the *temple* are counted among the richest and most magnificent, not only of the countries bordering on the Rhine, but of all Germany. But I leave it to the poet to praise their charms as they deserve, only calling to the lover of nature: go thither and see, and feast upon the wonderful beauties the Lord of the universe has scattered there in abundance *)!

At Rüdesheim there are some remarkable

*) This excursion is also made from Rüdesheim by means of ponies, which may be had at all times. In that case you arrive first at the temple and return by Assmannshausen.

ancient castles well worth seeing. The Niederburg is the more ancient of them, and, on account of its site, architecture and the disposition of its interior, also the more interesting. It was originally a roman castle, as we may conclude from its huge rocky walls of roman construction, and the roman vessels and urns dug out there some years ago. This castle is at present the property of count Ingelheim, who caused several apartments in it to be repaired, and the interior to be put into a state both pleasing to the numerous visitors resorting to it, and serving as a document of the owner's refined taste.

There are three other ancient castles still extant at Rüdesheim, which in part are habitable. The most remarkable of them was the property of the ancient knights of *Brömser,* and at present belongs to count *Goudenhofen.* Some curious antiquities are still to be seen in it.

On your return to Wiesbaden the *Johannisberg* claims your notice, being one of the most charming and valuable spots of this beautiful country. This valuable property was in the middle age a rich abbey of the Benedictines, and in the beginning of the 18th century reverted to the princes-abbots of Fulda. In 1803 it became the property of the house of Orange and in 1806, after the battle of Jena, was presented by Napoleon to the french

marshal *Kellermann.* Its present owner is prince *Metternich.* The wine which grows here, is celebrated all over Europe, and was esteemed the most excellent of all rhenish wines, before the famous wine of *Steinberg* was put in competition with it.

The situation of this castle, upon a projection of the chain of hills of the *Taunus,* affords a most extensive view of the Rhinegau, the Palatinate, the Bergstrasse etc. etc., whether you enjoy it on the balcony of this princely mansion, or in its environs.

On your return you stop at *Reichartshausen,* formerly a manor belonging to the rich abbey of *Eberbach,* at present a highly embellished and charming country-seat of count *Schönborn.* Here you find an exquisite collection of pictures by eminent modern artists, together with other objects of art, which are shown very obligingly to every lover of the fine arts.

From this excursion to the more distant environs of Wiesbaden you return in the evening of the same day, your mind being occupied with recollections of the most charming sceneries, and of grand historical monuments.

Besides the above mentioned excursions there are many more, which require only half a day or a few hours, some of which I shall point out to my readers.

Two short hours distant from here lies

Rauenthal, celebrated both for the excellent wine growing upon its hills and the uncommonly charming views afforded by them.

A very convenient causeway takes you by the way of *Schierstein* to *Neudorf,* where you leave your carriage or horse at some good inn, and, if you arrive in the morning, order a dinner. When you walk to the small village of *Rauenthal,* which is only ten minutes distant, view its romantic environs, and from the ruins of the old church enjoy the most luxuriant and charming views to be met with on the banks of the Rhine.

Then you take a pleasant ride to *Kiedrich* and the late abbey of *Eberbach.* The road to both places goes through *Eltville,* and is excellent. At *Kiedrich,* celebrated for its *Gräfenberger,* one of the best rhenish wines, a fine gothic chapel is well worth seeing, as are also the ruins of the castle of *Scharfenstein,* from which you have a beautiful view of the Rhine and its luxuriant banks. *Rittersruh,* a plantation created upon the finest spot by the noble family of *Ritter,* was formerly much frequented. A theatre cut out in the adjacent wood for the purpose of dramatic performances, is deserving of your notice. The scenes of this theatre are formed of young beech-trees, through which you may enjoy the most charming and varied views. *Eberbach,* a *Bernardine* abbey, founded in the XI cen-

tury, is now celebrated all over Germany as an excellent lunatic hospital *), and in an artistical-antiquarian regard worth seeing. You also find here specimens of the most esteemed ducal wines.

Not far from *Eberbach* lies *Steinberg*, a large ducal domain, which being enclosed by huge masses of rocks, produces the king of rhenish wines, and in a small temple built in it affords an extensive view of these romantic and fertile districts.

Wiesbaden is situated within a ring of the most charming environs, gifted so liberally by nature, that the eye of the lover of natural beauties is surprised every where by her exquisite charms.

In the east you are invited by the vine-hills of *Hochheim*, so frequently the object of the poets' song. In a lateral direction, at a small distance from *Hochheim*, *Weilbach* is worth seeing on account of its sulphurous spring. Should you, however, be disposed to devote a whole day to a most pleasant excursion, I would advise you to visit *petty Switzerland* (die kleine Schweiz), which is

*) This institute is indebted for its excellent organisation and great usefulness to the worthy president of our regency, Mr. *Möller*, and to its very respectable governors, Messrs. *Lindpaintner* and *Windt*.

adorned with every beauty and every charm. The old towns of *Eppstein*, *Königstein* and *Falkenstein*, as well as *Cronberg* and *Soden* *), a much frequented watering-place founded in the earlier part of the midle-age, are scattered over it in a picturesque manner. The loftiest masses of rocks, at the foot of which steep precipices are yawning, overtopped by the grand ruins of strong castles (excellent subjects for the painter's pencil), peer down upon you through charming groups of ancient oak- and beech-trees, interspersed by luxuriant meadow-grounds, and groves of sweet chessnut- and fruit-trees. Nature has scattered here her choicest gifts. Romans and ancient Germans have left monuments here. The castles of *Cronberg* **), *Königstein*, *Frankenberg*, and, more especially the *Feldberg* afford the richest and the most

*) *Soden* is four leagues distant from Wiesbaden. It is resorted to on account of a lukewarm mineral spring, accounted to be very efficatious in scrofulous disorders as well as in diseases incident to children in general. Cronberg possesses a very efficacious and pleasant chalybeate spring and a sulphureous well.

**) Cronberg enjoyed in the middle age equal privileges with Francfort on the Main, which were confirmed by emperor Charles IV. in 1367, and was the property of the dynasts of Cronberg. Its garrison beat the citizens of Francfort in a battle in which the latter lost 800 men, and they show at that castle a coeval picture of that glorious event.

magnificent views of the fertile Franconia as far as the mountains of Thuringia, of the Odenwald, the Bergstrasse, the charming Palatinate and of the distant Vogesian mountains, whilst the foreground of this rich picture is formed by the vallies of the Rhine and Main with their numerous towns, villages and country-seats.

Thus the near and distant environs of Wiesbaden offer ample, nay almost inexhaustible means of enjoyment in hours not devoted to the more needful use of the mineral water. All the hills and vallies around Wiesbaden upon which the history of a classic world reposes, are covered partly with luxuriant cornfields and meadows, partly with chessnut- and fruit-trees, and partly with vines, and the fertility displaying itself everywhere, diffuse on serene days a peaceful aspect over all the country around, and inspires the guiltless bosom of the beholder with heavenly calmness.

CHAPTER III.

Monuments of antiquity in and about Wiesbaden.

Alles umher haucht classischen Duft, — und
das Land und die Quellen,
Jedes Gestein ist hoher Erinnerung Bild! *)

Heilquellen des Taunus, Gesang 3.

The authors of monographies of mineral springs generally garnish their writings with a political history of the spot where they issue, with romantic traditions, and frequently even with the genealogy of the reigning family, and the like, merely for the purpose of amusing the reader. This procedure, however, gives to such compositions the appearance rather of novels than of scientific works. The balneographer cannot, indeed, entirely dispense with this method, which, if it do not entirely engross the tendency of such a work, also is

*) All around breaths classic fragrancy; and the country and its springs, each stone recall reminiscences of sublimest import.

of some use. Physicians, therefore, will excuse me, and the lovers of archaiology will not take it amiss, if I here enumerate the monuments of antiquity still extant in our town and in its environs, and show what historical reminiscences this charming classical ground is qualified to recall. Though I cannot pretend to prove by the testimony of roman authors each individual fact I am going to relate; yet much of it has been authenticated by the investigations of archaiologists of acknowledged merit, whilst they have established the probability of many others.

I shall, therefor, begin with Wiesbaden itself.

The roman historian *Florus* relates (L. IV. Ch. 12.) that *Drusus* had 50 castles constructed along the frontiers, to guard against the inroads of the Germans. They formed oblong squares, surrounded with huge walls, having four gates and deep fosses. Between Coblence and Mayence there were seven such castles, great part of whose ruins is still visible; the best preserved of these are to be seen five leagues distant from here, in the forest of Holzhausen *). There was also one of them at Wiesbaden. Part of the cir-

*) The well preserved castle of the counts of Ingelheim at Rüdesheim, is also, according to *Dorow*, of genuine roman construction, urns having been found there etc.

cumvallation of this fort, at present enclosing about 650 feet of the eastern side of our burying-ground, may still be seen. These massy roman walls are ten feet thick and uncommonly strong. The last remaining tower of this fort, at the extremity of the present *Metzgergasse*, was pulled down about 50 years ago. No tradition reported that there had been one of our mineral springs in this fort; but when in 1783 the foundation of the present *Schützenhof* was laying, the workmen discovered roman baths paved with beautiful bricks, extremely well burnt, bearing the mark of the 12th legion, whence it was ascertained that the excellent spring supplying the *Schützenhof Gemeinbad* with water, was known to and made use of already by the Romans. A stone dug up on that occasion is fixed in the bathing-hall of that house, and appears to be a monumental stone of a roman centurio, devoted by him to Apollo after the recovery of his health. The beauty of the letters justifies the supposition of its having been put up in the first or second century after Christ.

It is a reddish, very firm sandstone and bears the following inscription:

IN. H. D. D.
APOLLINI. TOV
TIORIGI
L. MARINIUS
MARINIA
NUS) LEG VII
GEMP. F. EX. AFF
D. D. D. FORTUNAE VO
TI COMPOS.

The other main springs of the town were also made use of by the Romans. Roman masonry, believed to have been the foundation of a bathing establishment, for instance, was discovered in 1807 in the garden of the Adler, not far from the spring belonging to that house.

The ancient Kochbrunnen also was known to them. When the foundation of the present Römerbad was laying (1815), considerable substructions of ancient roman baths, surrounded by massy walls, were discovered. A well preserved large bath, which, having a spring of its own, could be employed as a sweating-bath *(Laconicum)*, is still to be seen in the bathing-hall of that house. Some human skeletons — two coins of the emperors *Constantine* and *Maximian* — vases and drinking-vessels of *terra sigillata* and common clay — many fragments of tiles, one of which was marked: *Legio* XIV, roman needles, rings etc. etc. were found on the same spot

In other places the workmen dug out stones or tiles with the names of the 7th, 8th and 22d legions upon them. The latter of these was, after the destruction of Jerusalem under *Titus*, removed to Mayence, which continued garrisoned by it above 250 years.

Some antique keys, very skilfully wrought, were also dug out there.

The roman market-place seems to have been situated in the new road to Schwalbach, where a votive-stone, dedicated to Mercury and Nundina (the goddess of markets), ornamented with fine emblems, was discovered. A roman altar belonging to a period when the arts were flourishing at Rome, was dug out lately near this monumental stone.

On the heathen-road *(Heidenweg)*, as it is called, at the north-west side of the town, the roman burying-ground was situated, and they do not dig five feet deep in those spots, without meeting with bricks, bones, broken urns etc. etc. In the late decennium, when in the opposite part of the town new streets were building, the workmen found every where monuments of antiquity, and coins of *Marcus Antonius, Augustus, Livia, Agrippa, Tiberius, Nero, Claudius, Drusus, Germanicus, Caligula, Claudius Nero, Galba, Vitellius, Vespasianus, Domitianus, Nerva, Trajanus, Hadrianus, Antoninus Pius, Marcus Aurelius, Commodus, Julianus, Septimius Severus* and

Alexander Severus, Caracalla, Julia, Mamea, Maximus, Gordianus III, *Gallienus, Marius, Probus, Diocletianus, Constantinus Magnus, Gratianus* etc. etc.

It was, perhaps, in the roman bath, the eagle, or the archers' court, where *Macrianus,* king of the *Allemanni* in 371 was using the baths, when Valentinianus surprised him from Mayence. *Severus* commanded the infantry, and Theodosius the cavalry. The latter being intent on plundering only, the escort of Macrianus were left at liberty to carry their master through defiles to the neighbouring Buccinabanti, whose territory Valentinianus now laid waste. The king of the Allemanni, notwithstanding, maintained his ground, and afterwards concluded, between Kastel and Biebrich, a treaty with the Romans, in virtue of which the right and left shore of the Rhine were ceded *(V. Ammianus Marcellinus* L. XXIX, C. 3. and 4.).

Many urns, rings, weapons, stones with inscriptions etc. have disappeared in private cabinets, or are at present exhibited at Bonn *).

*) Should any of my readers be curious to obtain more particular information respecting the tombs of the ancient Germans and Romans in the environs of our town, he will find it in the: *„Opferstätte und Grabhügel der Germanen und Römer am Rhein, von Dorow* 1819 und 1821, *bei Ludwig Schellenberg,"* — a work composed

A great quantity of such antiquities has been dug out of late years in the *Fasanerie* (pheasants' warren) where in a lovely grove a long range of tombs of the ancient Mattiaki and Romans may be seen: such a tomb being opened eleven years ago, Mr. Dorow found in it some urns, bones of horses and men, a battle-ax of serpentine-stone, very skilfully wrought. It was a very ancient german tomb, which popular tradition reports to have contained the bones of some german chief, or prince.

On the beautiful road to Bleidenstadt, in the neighbourhood of Adam's valley, which is reported to have been an ancient german settlement, the wanderer is surprised by the sight of numerous tombs, in one of which were found a *Druidic* altar *) (perhaps hidden there from the invading Romans, who deemed the graves sacred), a great quantity of ashes, bones, some swords, heads of arrows etc.

There are some more tombs in the forest near Dotzheim, on the road to Schwalbach — near Kloppenheim, Medenbach, Neuhof.

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with great archaiological exactness. A great deal referring to this subject, will also be found in *Ritters: „Denkwürdigkeiten der Stadt Wiesbaden."*

*) It is represented on the frontispiece of Dorow's work.

German and roman tombs frequently are found amicably associated, and scarcely distinguishable by external marks. They are found from 4 feet high, and 16 paces in circumference, to 24 feet high and 160 paces in circumference.

The castle of the Neros, built by Drusus and Tiberius, to keep off the invading Germans, stood upon mount Nero, a quarter of a league distant from our town, where the remains of a fosse and a quantity of bricks are still found.

The reader is requested, now to attend me to the *Platte*, situated $1\frac{1}{2}$ short league from here, and adorned with a ducal hunting-castle and a cheerful inn. You ascend to it gradually, on a road very convenient both for walking and carriages, through a wood of fruit- sweet chessnut- and beech-trees. In the background of the grand prospect which opens to you as you arrive on the top of the mount, you behold the vogesian mountains, and the charming range of hills forming the Bergstrasse, which appears to you to be less distant than before, and in front of it the majestic Rhine with its islands and the charming plains through which it is flowing, along with the towns, numberless villages and villas covering them. This wonderful sight leaves no beholder unmoved, and surprises with unspeakable delight even the traveller who has traversed the most beauti-

ful parts of Europe. These mountains, ruins and habitations may now lift their veil and disclose to us the deeds of former times, which they witnessed in ages long gone by.

Not far from the Platte, in a north-easterly direction, you behold the ancient *Rentmauer*, as it is called, which, as well as the stone ramparts near *Altkoenig* (old king), were defensive works of the ancient vigorous tribes of Germany against the Gauls or Romans. The ancient roman high-road leading to the district of the Lahn, went close by the *Trompeter*, situated at a small distance from the Platte. Mr. Gerning justly denominates the neighbouring eminences classic domes. The eye dwells with delight upon this italian chain of mountains, which seem to be terminated by the Stauffen, the Altkoenig and the Feldberg, the highest mountains of the south-west part of Germany.

At the southern declivity of the Stauffen many roman tombs are seen, and on its summit remains of ramparts of earth *).

Its two neighbours, the Feldberg and Altkoenig, are, however, more remarkable. On the latter the colossal stone-walls of the ancient

*) From the Platte the mountain only can be seen; if you desire to see the antiquities, you must approach nearer.

Celts are still defying the destructive power of time. Here, and upon the adjacent mountain *(Thalwegberg),* the largest of these works are seen. An old chronicle of the neighbouring village of *Oberursel,* and popular tradition pretend these works had been erected by Ariovistus (against J. Caesar or the Gauls), and it is remarkable, that these walls are towered up higher towards the south, than towards the north. It was from here that *Rando,* a descendant of the tribe of *Macrianus,* surprised the Romans at Mayence, returning to the mountain with his booty and prisoners. *(Winkelmann* and *Bernhard.)*

An ancient horse-road *(Rennweg)* led up to the summit of this mountain and to the ramparts near Wiesbaden.

The *Feldberg,* which you may ascend with ease, affords, within a circumference of 150 leagues, perhaps the most extensive view in the south-western part of Germany. You behold from its top 12 towns, and can distinguish about 100 villages. Its highly advantageous site qualified it extremely well, together with that part of the Taunus that borders on the Rhine, for defending Germany against the inroads of the Romans; and these ramparts forming nearly a line at the Feldberg, on the hights of Wiesbaden, and on the summits of the mountains of the Rhinegau, where they

are visible still, furnish us, as Mr. *Gerning* observes, with the first trace of a regular line of fortifications of the ancient Germans.

Here I cannot pass over in silence a considerable work of the Romans, the *Pfahlgraben* (ditch enclosed with pallisadoes) at the northern declivity of the Feldberg. It commences near *Dünkelsbühl* and *Pörring*, on the Danube, where emperor *Probus* fortified it with strong walls (whence it is still called by the people of those parts, the Devil's wall), was carried to the extent of 160 german miles, as far as Holland, and was calculated to secure to the Romans the southern, being the finest, part of Germany. According to Tacitus (Annals, L. 1. Ch. 50.) it was begun by *Tiberius*, and enlarged, or renewed, by *Trajanus, Hadrianus, Septimius Severus, Probus, Julianus* and *Valentinianus*. It consisted of a rampart about 15 feet high, which was strengthened by means of trees and hedges, and in the principal parts defended by forts. The Pfahlgraben stretches $1\frac{1}{2}$ league behind the Platte towards Schwalbach, and encloses the northern part of the Taunus.

Tacitus, Eutropius, Dio Cassius, Vopiscus, Aelius Spartianus mention this uncommon work *).

*) *Habel* and *Gerning*, especially the for-

From the Feldberg, or from the Altkoenig you may descry many a spot that will awaken in your mind classical reminiscences; for instance, the *Salburg* near *Homburg*, a fort probably built by *Drusus*, destroyed under *Hermann*, and rebuilt by *Germanicus*. Next to it you behold the *Kapersburg* — the *Capellatium* of *Ammianus Marcellinus* (L. XVIII, C. 2.), where Julianus near the Pfahlgraben concluded peace with the Allemanni; the *Hunnenberg*, or *Hühnerkopf*, where Attila is reported to have had a fortified camp, the remains of which may be seen still.

> Here is classical ground — forsooth, immortal deeds
> Crown the regions of the Taunus with never fading glory!
>
> *Heilquellen des Taunus. Gesang* 2.

Turning our looks from the Platte more towards the eastern background, we behold the charming chain of hills running along the mountain-road *(Bergstrasse)*, especially the lofty *Melibocus*, in whose environs the sanguinary battle, in which *Marbod* was beaten by *Hermann*, is said to have been fought *(Tacit. Annal.* L. II, C. 45. 46.).

In a more southern direction you behold

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mer, have made this roman work better known. Vid. the notes of the latter to the: „*Heilquellen des Taunus.*“

the neighbouring *Mayence* — once called „the beautiful", „the golden", and now, perhaps, to be denominated „the *iron* town", whose site, on account of its beauty, has been compared by some to Naples, and by others to Constantinople *). What recollections of ages long past by, are dwelling upon this place — frequently, both in ancient and in modern times, the bullwark of Germany; many a time, too, under the Romans and the modern Gauls, the point whence Germany's subjugation was to have proceeded. From here did the christian religion and roman civilisation spread over Germany; here did *Arnold Salmann* found the rhenane Hansa, thus establishing the first bulwark against the club-law, and giving rise to the prosperity of our country and to civil liberty; here the art of printing was invented, and the use of fire-arms introduced.

Inhabited by Celts, Mayence probably was fortified by *Agrippa* and afterwards particularly by *Drusus Germanicus*, who enlarged it at the same time. There are many monuments left reminding us of that military chief; for instance, the *Eichelstein*, as it is called, a cenotaph, and the large aqueduct, by means of which the Romans, being unacquainted with the hydrostatic laws, conducted water for drinking to the town from a great distance etc. This

*) *v. Gerning's Rheingegenden.*

aqueduct passes by the village of *Bretzenheim* (*Vicus Brittanorum*), founded by a british legion, where emperor *Alexander Severus* was murdered by his Britons in 236.

Hadrianus enlarged the town, and emperor *Trajanus* built the fortress of *Kufstein* on the point of the Main. Here it was, probably, where *Ariovistus* led his troops across the Rhine against the Gauls, and *Caesar* and *Agrippa* *), *Drusus*, *Tiberius* and *Germanicus*, *Diocletianus*, *Trajanus* and *Hadrianus*, *Probus* and *Commodus*, *Julianus* and *Valentinianus* led their armies against the *Sueves*, *Catti* and *Allemanni*, who abhorred the roman yoke **). This town was destroyed in the fifth century by the Vandals and Huns, under *Krock* and *Attila*, and tradition still records the horrors of those times.

Facing Mayence lies the fort of *Kastel*, a roman bridge-head, built by *Drusus*. At very

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*) Agrippa is reported to have crossed the Rhine near Biebrich. As for the spots where Caesar crossed this river archaiologists differ in oponion Some say he had crossed it at Mayence, as *Joannes Servarius*, *Schöflin*, *Fuchs*, *Habel*; whilst *Spangenberg*, *Honthheim* and others suppose he had crossed it at *Neuwied*, — *Wytenbach* and *v. Gerning* seem to hesitate to which of these places the preference should be given.

**) *v. Gerning's Rheingegenden von Mainz bis Köln.*

low water two stone-pillars of a roman bridge grow visible. *Strabo* informs us (C. 4.) that several such bridges were thrown across the Rhine.

Looking from the Platte south-westward, you behold part of the *Rhinegau,* separated by the majestic river from the left bank of the Rhine This charming country too is on the north-side bordered by the Taunus, on whose top you may still see many ruins of ancient walls, and (near Rauenthal) of an ancient german grove-temple. At *Eltville* there was a roman bridge-head, and the adjacent *Heidenfahrt,* with its ancient tombhills, is said to be the spot, where Romans and ancient Germans, contesting for the possession of the Rhinegau, used to cross the river. On the opposite bank the attention of the beholder is attracted by the charming situation of *Niederingelheim,* where *Charles the Great* spent much of his time at his villa, which was supported by 100 columns of marble and granit, conveyed thither from Rome and Ravenna.

But I must break off here, for a volume would scarcely suffice, were I only cursorily to enumerate all the monuments of the middle age that may be seen here still.

N. The spots in our environs to which I have referred, and which are rendered remarkable by the most ancient history of our country may also, for the greater part, be viewed from some emi-

nences only 20 or 30 minutes distant from Wiesbaden, as from mount Nero, from the height of Mosbach or Erbenheim, which is particularly remarkable, because the ancient Königsstuhl (king's-stool) the site of which is still marked by four small stones, stood on its plain, where emperor Frederic Barbarossa in 1184 kept the famous diet, and where the emperors Henry II, Lothar II, Philipp of Swabia, Frederic II were chosen and proclaimed chief heads of the German empire.

M. F. J. Bodman's excellent work: *„Rheingauische Alterthümer, oder Landes- und Regimentsverfassung* etc. p. 95.

CHAPTER IV.

Observations on the natural history of the Taunus. Site of these mountains. Their extent and mineral springs. Their geognostic products. Hypotheses on the origin of mineral springs. Observations on the plants of their environs.

THE great Hercinian forest extending in many directions in Germany, was, according to J. Caesar (L. VI. C. 24.), known already to the Greeks, and comprehended within it the range of mountains by the Romans denominated the Taunus. But we comprehend under this denomination exclusively that part of a greater chain of mountains, which begins in *Wetteravia*, and in the tract of country between the Rhine, Main and Lahn spreads in different directions. These mountains approach the Rhine, near Wiesbaden, and, frequently touching the bank of the Rhine, extend downwards the river as far as Ehrenbreitstein.

Thus this charming chain of mountains forms a natural wall round the luxuriant banks of the Rhine, enclosing the celebrated

Rhinegau, and *screens those parts, as well as our town from the injurious influence of the northwinds.*

Here, then, is the country of wine; here the fruits of southern Europe, almonds, figs, sweet chessnuts, peaches and mulberry-trees thrive exceedingly well, and yield abundant harvests. The climate is less mild on the northern part of the mountain, and on the heights of the *Westerwald* the scanty harvest of oats is frequently housed, when the ground is already covered with snow.

Notwithstanding this disadvantage, there are but few such sterile tracts to be met with in our country, which, generally speaking, is very fertile, the major part of it, likewise enclosed by the *northern* branches of the Taunus, being extremely productive, even wine being produced in some districts, as f. i. at Runkel.

The highest point of the Taunus, as well as of south-western Germany in general, is the *Feldberg*, situated four leagues from here, towards Francfort. It rises (according to G. G. Schmidt) 2605 parisian feet above the level of the sea, and 2350 above the surface of the Main. It produces many alpine plants.

There is no country in Europe that produces within so small a space as is intersected in various directions by the Taunus, and inclosed by the Rhine, Main and Lahn, so many

mineral springs so different from each other and so efficacious. About 90 chalybeate springs alone might be named here, and among these those of *Schwalbach, Schwalheim, Braubach, Werkbach, Oberlahnstein, Marienfels*, where some years ago roman baths and coins were found — *Born* and *Cronberg* are well known and partly celebrated.

Most of the springs at *Selters, Fachingen, Dinkhold, Geilnau, Wiesbaden, Ems, Soden, Schlangenbad,* together with the excellent sulphureous spring at *Weilbach* were known and celebrated already in ancient times, and from year to year the fame they have obtained is proved to be perfectly just.

This district contains also saline springs, some of which are very productive, for instance those at *Nauheim, Fauerbach, Utphe, Homburg, Kronberg, Wiesbaden, Oberlahnstein.* Some of these are still worked, and all evidently run from North-east to south-west, keeping, like the above mentioned acidulae, the direction from east to west.

The attempts of balneographers to give us in their monographies a mineralogical history of the soil from which the mineral springs issue, have hitherto contributed very little to enlarge our knowledge of that wonderful process of nature. And how can it be reasonably expected that the meagre result of the superficial investigation of a small district could

throw sufficient light upon an operation of nature originating in the innermost womb of our globe, and drawing within its vortex extensive tracts of mountains and large countries? Messrs. *Stift,* supreme counsellor of mines, and *Kastner,* aulic counsellor, are going to publish a particular work on the petrography of the Taunus, to which I must refer the reader, lest I should be too diffuse.

The following general hints will not, however, prove uninteresting to lovers of geognostic researches.

It is well known that an extensive chain of mountains, of the chistous formation stretches through the north-western part of Germany from north-east to south-west, and, rich in various kinds of minerals, extends, according to the observations of *Engelhart, v. Raumer* and *Kieferstein,* as far as the environs of *Valenciennes* in the north-eastern part of France. Two branches of these mountains spread through the dutchy of Nassau, and form the southern and northern ranges of the Taunus.

The geognosy of Wiesbaden, which belongs to the southern branch of the Taunus, offers the following remarks.

The mountain near this town contains a peculiar schiste, consisting of layers of quarz and chlorite or talc. The latter prevails, whenever the mountain is in a state of decompo-

sition, which mostly is the case, when it is situated in the neighbourhood of mineral springs, as f. i. in the quarries of Nero street, or at Sonnenberg and Dotzheim.

The schiste is frequently crossed by quarz in thick veins and isolated nests, the latter of which are mostly covered with terraceous chlorite. It also frequently penetrates the substance of the quarz itself and gives it a green tinge. Near the fulling mill epidote occurs on these nests of quarz. The latter, which frequently assimilates to chalcedony, is of a milky or blueish colour, and passes over into conchoidal hornstone. Silicium of copper and sulphur, malachite sulphureous ultramarine, copper-green, manganesium are, however, found only in grains or in efflorescence. Only in the vicinity of mineral springs chiste occurs in so soft a state, that the quarz is scarcely perceptible. This rock is frequently penetrated with oxyd of iron which communicates to it a red colour, like that of red sandstone.

Compact fibrous manganesium frequently covers the fissures. Graphite occurs rarely in the shape of incrustation. Here and there the quarzstones enclose fragments of schiste penetrated with oxyd of iron; f. i. on the *Trompeter*.

The soil of the south-side of the town, down to the bed of the Rhine, is entirely dif-

ferent from that which occurs on the north- and north-east sides. Here you meet with coarse lime, sometimes in a soft state, and sometimes solid, in layers, and sometimes alternating with layers of alumina, presenting a smooth surface, when broken. Petrifactions, especially river-shells, frequently occur in that fossil, sometimes also sparry chrystals of lime and grey ore of manganese (black wadd). Impressions of plants and roundish vegetable stalks are also sometimes to be met with in coarse lime.

Regular strata rarely occur, and when they do, they are perceptile within a small space only. In the uppermost formations of the coarse lime, sandy and plastic alumina alternate, which near Hochheim contain bovey coal *) and sparry gypsum. This alumen extends as far as the schistous mountains. The latest formations are loam, sand and gravel, frequently of considerable depth, as f i. in the sandpits near *Mosbach* and *Erbenheim*. Small banks of bog iron ore are to be met with here, together with tuberous and kidney-formed hollow pieces of marl.

In a north-western direction of Wiesbaden, near *Nauroth*, *Rambach* and *Sonnenberg*,

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*) When this stratum of bovey-coal was laid open 52 years ago, the excellent sulphureous spring of *Weilbach* was discovered in it.

we meet with basalt, frequently containing quarz and hornblend in needles, as well as manganesium in christalised nests. The basalt of *Nauroth* frequently contains, and in large masses, olivine, augit, magnetic iron, feldspar, and, though rarely, quarz.

Here and at *Sonnenberg* basalt crosses the slate in veins and in the depth is much more abundant than near the surface. In both places small masses of schiste are inclosed in the basalt.

As for the farther continuation of the above mentioned two branches of the Taunus, the following observations may suffice.

The south-western branch attains its highest point at the Feldberg, situated four leagues from here, stretches to Assmannshausen on the Rhine, forming on the opposite side of the river what is called the Hundsrück. On the highest point of this branch we meet with pure quarz, whose solidity decreases on the declivity of the mountain, receiving an aluminous cement.

Soft, red and green argillit, frequently traversed by quarz, is the principal component part of the south-eastern declivity of the Taunus. At the foot of this chain of mountains and in the valley of the Rhine we meet with rocks proceeding from the ridge of the Taunus, and with alluvious earth, which cover the schiste and consist of conglomerations of silica,

argil, sand, hornstone, marl, but in the depth, of lime of a later formation.

The north-western declivity of the Taunus distinguishes itself from that of the south-west both by its external formation and in a mineralogical respect. It is intersected by many vallies and belongs to the greywack-formation, in which the greywack-chiste prevails. The transition-argillit is frequently united with the greywack, and veins of copper- lead- and silver-ore, together with blend, cobalt, sulphuret of silica and manganesium occur sometimes in the greywack.

The schaalstone-formation commences at the north-western declivity. It abounds in copper- and lead-ores, especially in red iron-ore, which occurs in strata. This formation of schaalstone runs along the north-western declivity of the Taunus, and on that side is enclosed by greenstone and basaltic formations. There are also some considerable strata of porphyry occurring.

This north-western declivity, therefore, as well as the *Westerwald*, belongs to the greywack-formation, beyond which basalt and basaltic rocks extend, excepting some strata of transition-argillit with limestone and argillit. Basalt occurs in almost all the formations we know, whilst trachyte is more rarely to be met with, being found only on some conical tops. As for tophus (tuffstone), belonging

sometimes to the basaltic formation, sometimes to that of trachyte, it occurs in several parts, as well as pumisstone. Extensive strata of bovey-coal, accompanied and covered by large strata of argil, occur on the heights of the *Westerwald.*

After these cursory observations on the geology and mineralogy of the Taunus and the environs of Wiesbaden, some of my readers might be desirous of being informed of the notions entertained by some of the latest german naturalists of the origin of mineral springs.

Steffens and *Wurzer* judge them to be the product of an electro-chymical operation of nature, in consequence of which they might be the effect of different poles. *Wurzer* expresses himself on this subject in the following terms. „As nature is performing her operations in her immense laboratory; so is here likewise the *galvanic apparatus* of an immense seize. Extensive masses of mountains, perhaps of infathomable depth, probably form the individual plates of this *voltaic* column.“ („In her distilling operations,“ says Lichtenberg, „the belly of her retort sometimes lies in Africa, its neck extending all over Europe, whilst we may have to look for its recipient in — Sibiria“).

„What a quantity, and what a degree of powers must be developed here! What an

immensely extensive sphere of action must such an apparatus have! What attractions, what combinations, what separations must take place! Hence the constant repetition of violent convulsions of our globe that have recurred these many ages, perhaps thousands of years past. They might, in a certain sense, be everlasting, if nature did allow a state of standing still to any material being, and if the *circulus aeterni motus* did not incessantly agitate all created beings. No human mind can conceive nor calculate how great the powers of such an apparatus must be."

G. Bischof, Stift, Struve, Kastner, and some other naturalists have conceived different notions of the origin of mineral springs, ascribing the rise of some of them to the influence of volcanic activity, whilst they are inclined to deduce the origin of others merely from the state of gradual solution, in which they suppose the matter is which constitutes the component parts of mineral waters, and is accumulated in the bowels of the earth.

„As to the original cause of the mineral springs of Nassau," says *Kastner* *), „they, especially the hot ones, most probably are of volcanic origin, and it is remarkable, that they issue in the vicinity of volcanic mountains

*) In his: *Archiv für die gesammte Naturlehre.* B. 16. H. 3. p. 312.

and that the hot ones proceed from the relatively *older,* and the cold ones from the relatively *younger* formation of rocks; that the former are not at all affected by the change of the seasons and the state of the atmosphere (viz: rain, dissolving of snow in spring, inundations etc. etc., whilst the latter are sensibly influenced by them *). I suppose that the hot springs are formed by a continued *oxydation of inflammable gases rising from volcanic hearths,* in a considerable depth, and that thus not only pure hydrogene, as well as sodium, potassium etc. etc. are burnt, all at the expense of the oxygen of the atmospheric air, which, having penetrated to a great depth, has been considerably condensed."

„But," says *Stift* **), the influence of volcanic powers, in general, evidently reaches farther than the occurrence of volcanic mountains. This is proved by the frequent returns of earthquakes in parts where neither volcanos nor volcanic mountains exist, and that these may have a reference to mineral springs appears by the temporary cessations and changes

*) Thus, f. i., the spring of Fachingen contains a considerably greater quantity of gas in spring, when it rains copiously, when the snow is melting, and the country around the spring is slightly inundated.

**) *Wiesbaden und seine Heilquellen, von Rullmann,* S. 98. u. f.

ges many of the latter are liable to, during violent earthquakes, f. i. during the famous dreadful commotion of the earth, by which Lisbon was destroyed. This influence cannot but produce a change in the mountain-rocks, by which they are rendered capable of a lasting continuation of an electro-chymical process. The water circulating in the mountains, and partly formed by these operations, serves to draw within the sphere of the grand process of nature even such parts of mountains as have no direct communication with it; the atmosphere itself is reduced to a state of reaction, and the powerful effects resulting therefrom, cannot but produce important and extensive phenomena. The immense pressure under which these operations are preparing, encreases the tension, excites anew the first impelling powers, especially that of electricity *) and thus prepares the chymical operations of nature. The various substances contained in the bowels of the earth thus can act upon each other by means of oxydation and hydrogenisation, and the disengagement of caloric necessarily accompanying that process, cannot but augment and promote this influence, and it is consequently impossible that this should not cause decompositions and new formations."

*) It is a known fact that the slight pressure of fingers is sufficient to electrify some crystals. P.

„According to the excellent observations of Mr. *L. v. Buch* the volcanos, properly so called, are essentially composed of Trachyte. — That part of the dutchy of Nassau in which the mineral springs are situated, is surrounded with basaltic formations raised by volcanic powers, and these even appear in strata-like fissures near some springs, f. i. in the neighbourhood of Wiesbaden. It cannot, therefore, be denied that the volcanic effects extend to the vicinity of mineral springs, and these effects must be felt most strongly in the direction towards countries containing mineral springs, because the large vallies occurring there, offer the least resistance. The assertion that the mineral springs which continue to flow without intermission, depend upon the same powers that produce the above mentioned volcanic mountains, which have become extinct long since, might appear contradictory; this contradiction will, however, disappear, if we consider, that this very existence of mineral springs, which allows the volcanic powers to develop themselves freely, by affording them a continual vent, and preventing new eruptions, which can take place only when the first productions of the volcanic hearth meet with resistance, which encreases their force considerably. Communications with the principal hearth of volcanos may, therefore, exist in countries far distant from it, as well as an influence upon the mass

of the interior not oxidated. Hot vapours and gaseous acids may penetrate it, and exert their influence; in the new rocks formed by eruptions, metallic oxyds, alcalies and earths, singly torn up, may be dispersed, and coming gradually in contact with water and atmospheric matter, be put in action; but neither elevations nor eruptions can take place any more, chiefly because no resistance encreases the intensity of action any longer, and the whole assumes the quiet, and, therefore, insensible course of a continued chymical operation. Among these less violent and less perceptible effects must be reckoned the mineral springs, and the emanation of various kinds of gases, which we frequently perceive very near mineral springs *).

As to the original cause of the chymical contents of mineral springs naturalists likewise differ in opinion. *Kastner* makes the following observations on this subject **).

„In what manner the water of mineral springs is impregnated with saline and similar particles — whether, f. i. the alcalies and oxigenated ores, probably burning on their hearths, and being the main cause of their warmth, at the same time furnish the saline

*) Or which, as at Wiesbaden, issue forth along with, and contiguous to the hot stream. P.

**) *Handbuch der Meteorologie,* Vol. I. S. 388.

particles contained in them — still remains to be ascertained; yet our warm springs evidently prove that the environs nearest their current, at least those of the majority of them do not contain a sufficiency of that admixture to cover uninterruptedly the quantity of saline matter these springs yield only in the course of some months. Thus, f. i., do the mineral springs of Wiesbaden yield within 24 hours from 42,000 to 50,000 pounds of solid saline particles *)."

„Were we to suppose that these admixtures were washed down from the mountains, we must at the same time admit the existence of mountains composed of masses of salts far surpassing the mountains of *Glauber's* salt lately discovered in America, and at the same time allow that the depth in which they are situated must be so considerable that it is impossible for them to impregnate with these salts the springs of fresh water frequently issuing very near them. The same may be maintained with regard to salt springs."

A few observations on the vegetation of the Taunus will not, I hope, be deemed irrelevant by the reader.

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*) If we add the mineral springs lately discovered, then Wiesbaden furnishes daily at least 50,000 ℔ of salts, consequently annually 18,250,000 ℔. The springs of *Carlsbad* yield in the course of a year about 2,000,000 ℔ of solid parts.

The abrupt and frequent alternation of pretty high hills and steep eminences with warm meadow-grounds — of cold northern ridges of mountains with luxuriant vallies, in which a southern sun warms the ground, is highly favorable to vegetation, nay you often meet with the productions of more southern countries by the side of such as are peculiar to the middle alpine regions. I do not, however, intend abusing the patience of my readers by the enumeration of some thousands of botanical names, but shall mention only some plants rarely found in spots situated in the same latitude with Wiesbaden, or only the *scarcer species of them.*

Sedum villosum et album. — Hypericum pulchrum. — Lysimachia nemorum. — Carex pulicaris, et glauca Scopoli. — Prunus mahaleb. — Satyrium albidum et hircinum. — Vitis sylvestris. Digitalis purpurea. — Galanthus nivalis. — Rubus saxatilis. — Melampyrum sylvaticum. — Serapias ensifolia. — Dentaria bulbifera. — Schoenus compressus, nigricans, et fuscus. — Melica ciliata (Scheuchz) et elatior (Leers). — Scabiosa sylvatica. — Phyteuma orbicularis. — Athamanta Libanotis. — Betonica officinalis. Chrysoplenium oppositifolium. Orchis palustris et militaris (Roehling). — Levcojum vernum. Cardamine hirsuta. Cnicus tuberosus (Roehl). — Centaurea solstitialis. Allium rotundum. —

Pastinaca sativa. — Balotta nigra. — Mentha crispa. — Petasites hibrida. — Hyacinthus comosus. Botamogeton densum. — Avena tenuis (Moench). — Silene noctiflora. — Adonis autumnalis et aestivalis. — Althea hirsuta. Arabis arenosa (Sisymbrium Lin.). — Lactuca virosa. — Chondrilla juncea. — Bonus Henricus urbicum. — Caucalis latifolia et leptophylla. — Scorzonera laciniata. Calendula arvensis etc.

The following plants are, indeed, to be met with in the environs of Wiesbaden, yet, probably, not indigenous, but transplanted or conveyed hither by accident.

These are:

Epilobium rosmarinifolium. — Gentiana asclepiadea et bavarica. — Saxifraga Aizoon et mutata. — Satyrium nigrum. — Arenaria saxatilis et Verna. — Hieraceum villosum et aurantiacum. — Stipa pennata. — Valeriana Phu. — Ligusticum levisticum. — Angelica archangelica. — Betonica alopecuros. — Senecio doria, montanus et vernalis. — Nymphaea minima. — Dianthus barbatus. — Galium rubioides. — Stellaria nemorum. — Adonis vernalis. — Galeopsis cannabina. — Draba muralis. — Alyssum campestre (to be found nowhere else in Germany). — *Cheiranthus erysimoides. — Thalictrum aquilegifolium. — Centaurea phrygia. — Carduus arctioides. — Aconitum neomontanum etc.*

Tremella thermalis and the different species of *Asplenium* grow on the margins and walls of the hot springs. It is a curious fact that in 1807 an *arundo phragmites*, completely formed, grew up in the middle of the very deep spring of the eagle, of a heat of 53 degrees. But a careless hand broke it, before it could unfold its blossom.

CHAPTER V.

Physical and chymical Properties of the thermal water of Wiesbaden.

Sunt et mattiaci in Germania fontes calidi trans Rhenum, quorum haustus triduo fervet; circa margines vero pumicem faciunt aquae.

PLINIUS *Hist. nat. L.* XXXI. *C. II.*

THE water of the major part of the hot mineral springs of Wiesbaden is perfectly clear and limpid, in some only assuming a greyish-yellow hue. Its smell resembles that of boiled eggs, opened soon after they are done, or that of quicklime, when smelled at some distance, whilst in a state of effervescence. Its taste may be compared with that of weak broth rather oversalted.

The peculiar nature of the water of mineral springs is very perceptible; for it is by far more pleasant and reviving and does not appear to delicate people so biting as the heat of water warmed artificially. The latter, when at a high temperature, is said to injure the skin

much sooner than the natural thermal water of the same degree of heat.

Common spring water is more quickly made to boil than mineral water, whatever equal degree of heat they may possess *).

In order to ascertain this fact, Mr. Kastner made experiments with natural and artificial water of the *Kochbrunnen*, as well as with destilled water, and found that when they were of an equal degree of heat, and tried simultaneously, the temperature of the natural water of the *Kochbrunnen* is the lowest, viz. $= 74^0$, 1 C.; that of destilled water $= 75^0$, 9 C.; and that of factitious *Kochbrunnen*-water between both, viz. $= 75^0$, C. **).

It is well known that such mineral waters cool much more slowly than common spring-water, when heated. The barometer being at 28,2 and 6^0 under 0 R. the latter, having been

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*) Compare *Ritters Denkwürdigkeiten der Stadt Wiesbaden.* 1800. S. 172.

**) Whoever wishes to be informed in what manner Mr. Kastner experimented, may be satisfied by referring to his *Archiv für die gesammte Naturkunde.* Bd. XIV. a. XVIII. N. IV. — In order to guard myself against the aggressions of certain chymists who might feel inclined to question the correctness of the experiments made by Mr. Kastner and the results obtained by him, I must refer them to that gentleman, who, no doubt, will be able to vindicate his assertions to their satisfaction.

raised to the same degree of warmth with that of the thermal water, froze 25 minutes sooner. During this process a great number of bubbles, probably consisting of carbonic acid, disengaged themselves from the mineral water. The ice of the latter was tasteless, and the residue, not frozen, muddy and of a salt taste *).

According to some very exact experiments made by Mr. Kastner, the relative cooling-temperature was, under perfectly equal proportions,

a. that of destilled water = $28^0,5$ C.
b. that of the *Kochbrunnen* = $30^0,7$ —
c. that of the spring of the *Adler* . . . . . = $30^0,5$ —
d. that of the spring of the *Schützenhof* . . . = $29^0,8$ —
e. that of factitious *Kochbrunnen* . . . . . = $28^0,9$ — **).

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*) Comp. *Ritter* l. c. p. 172.

**) These results obtained by Mr. Kastner appear to be decisive, and the experiments undertaken by him, as for accuracy, do surpass those by Messrs. *Gmelin, Lade* and *Longchamp*.

Messrs. *Reus, Seiler* and *Schweigger* (*Schweigger's* Journal Bd. 39. p. 368.) ascertained another important fact. These gentlemen observed that water of *Töplitz*, drawn hot from the spring, required the *same* time for cooling, at a temperature of 37° to 24° R., as when suffered to cool and reheated

Mr. Kastner expressly made some experiments, to try the capability of mineral water of absorbing air, when he found that the water of hot springs absorbs a greater quantity of air, the colder it grows. The quantity of that air, for instance, which in a graduated cylinder of glass, closed at the top and bottom, whilst the experiment is making, is absorbed by the water enclosed along with it, was, at a temperature of 46—40° R. nearly only as great as that wich in cooling from 18—12° R. was absorbed.

The *chymically latent specific caloric* of these hot springs was satisfactorily ascertained first by Mr. *Kastner* who found that it is considerably *higher* in all hot springs of Wiesbaden, than in artificial compounds made in imitation of them, nay even in common water. If we take that of the latter at 1,0000, then the specific caloric of the mineral water of Wiesbaden is 1,0047.

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afterwards, but that the former at a lower temperature will keep warm longer than the latter.

It we compare the observations of the above mentioned gentlemen with the peculiar relation of the siderometer with regard to the natural mineral waters, at the period of spontaneous decomposition, first observed by Mr. Kastner, of which I shall speak presently: we shall find ourselves constrained to confess that hereby considerable advances have been made towards a better knowledge of the nature of mineral waters.

Mr. Ritter observed already in his work quoted above, that there existed a (really very desirable) difference, by no means inconsiderable, with regard to the temperature of the different springs. The hottest of our mineral springs is the *Kochbrunnen,* which Mr. Kastner ascertained to have a heat of 56° R.

Previous to Mr. *Kastner* experiments with regard to the *accumulation of electricity* in the thermalwater of Wiesbaden, and its conductor, or the electrical tension in hot springs, were rarely made, for want of proper instruments, and for the same reason were very defective. In order to ascertain it more accurately, this chymist made use of an electro-magnetical apparatus expressly contrived for that purpose, which afforded the following results: the electrical tension invariably was by some degrees of the declension of the magnetic needle *greater* than that of artificial mineral waters, composed to imitate that of thermal springs, and even of such compositions as contained a considerably greater quantity of saline particles than the springs. For instance, the declination of the magnetic needle in a composition made to imitate the water of the Kochbrunnen, amounted to 12°, in a compound of that sort *saturated* with salt to 25°, in the Kochbrunnen itself, however, to 35°, when all these fluids were intended, in the like temperature and equally distant from the zink- and copper-plate (the

wire-ends of the electro-magnetical multiplicator) to be substituted in the fluid for the moistened conductor *).

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*) *Walker* raised some objections *(v. Poggendorfs Annalen, Bd. IV. S. 89.)* against these results of Mr. *Kastner's* experiments, which induced the latter to make additional experiments, that made it appear: that the mineral waters, in the state in which they issue from the earth, exercise no influence upon the unarmed siderometer, but that this influence takes place in a high degree with the *subsequent spontaneous decomposition of the water* (as it is called), and *encreases in the same proportion in which the latter* does, so that, all causes checking the action of this instrument, being removed, it affords undoubtedly a means of ascertaining the incipient spontaneous decomposition of the waters and the degree in which it is proceeding, and, consequently, the strength of the chymical connexion of the component parts. Now, if *factitious mineral waters* produce a direct influence upon the siderometer, whereas this influence of the natural thermal water is not very perceptible before it has issued some time from the earth, but then, especially in springs containing a great quantity of gas, frequently encreases very considerably: this instrument affords an apparatus very well calculated to enable us to *distinguish natural mineral waters from such as are fabricated.*

It is, however, rather singular that the water of the *Schlangenbad*, known to be very deficient in component chymical particles, exercises a very considerable electrical influence. Both the above mentioned, and other experiments made by Mr.

Gimbernat, a spanish chymist, discovered already in 1802 *azotic gas* in our thermal springs, by means of *caustic strontites*. Mr. *Kastner* found that it rises at the sides of the hot water.

This naturalist carefully collected the *hot gas*, separating, by means of water of barytes, the *carbonic acid* contained in it, and examining the residue partly by adding hydrogene, in a *Volta's* electrometer, but chiefly by means of azotic gas saturated with sulphate of lime. The gas thus completely freed from carbonic acid showed itself as *pure azotic gas*, which, together with carbonic acid, in the proportion of 54 to 46, was present, which, as Mr. *Kastner* observes, seems to indicate that there exists in the hearth of thermal springs an air like that of the atmosphere, which, by the combustion of sulphur and carbon, existing in the springs in the form of acids and oxyds, and of the ores (those of earths and alcalies), has lost its oxygen.

Mr. Kastner, in his analytical process *separated by means of the combinations of known quantitative proportions* all the acids

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Kastner with very sensible electrometers, upon the thermal waters of *Wiesbaden, Schlangenbad* and *Ems*, convinced him *that the thermal waters are charged with electricity, when issuing from the earth.*

(Comp. *Kastner's Archiv für die gesammte Naturkunde, Bd. XVIII. No.* 4. *S.* 503—505.)

(excepting the carbonic- and silicious acids) *), and all the bases (excepting the organic extract). By the weight of these new individual compositions he calculated stoechio-metrically the quantity of each acid and of each base. The quantity of carbonic acid only was ascertained most exactly by means of a specific mercurial apparatus **).

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*) Silica, according to the electro-chymical theory, is accounted to be an acid, and called silicious acid, its affinity to the acids properly so called, being so slight as not to be able to neutralise them, and, *vice versa;* silicious acid, as an acid, betrays a particular affinity to alcalies, earths and such metallic oxyds as produce no acids. For besides many products of art, as glass, for instance, most minerals not belonging to the glass of stones, are compounds of silica, as an acid, with alkalies, earths and metallic oxyds, and are now called *silicates,* as the compounds of water are denominated *hydrates.* The method of analysing observed by Mr. *Kastner* corresponded upon the whole with that of *Murray,* the english chymist. *In Schweigger's Journal für Chemie und Physik, Bd.* 15., we find an extract of a memoir read by *John Murray* in the royal society of sciences at Edinburg, which is very interesting with regard to the analysis of mineral waters.

Trommsdorf, however, supposes already that the collective acids of mineral waters are reciprocally connected with their collective bases. Vid. *Anleitung zur chemischen Analyse* nach *Thenard, von Dr. B. Trommsdorf. Erfurt* 1817.

**) If some of my readers should wish to be

Mr. *Kastner's* procedure proved that the water of the *Kochbrunnen* in a *common* pound contains the following proportion of ponderable substances.

1. Acids:

Carbonic acid: 3,977970 grains (or 5,75 parts disengageable by boiling, and with 1,6869 (not disengageable by boiling) = 7,6869 inches.
Muriatic acid: 24,2501615 grains
Sulphuric acid: 0,638834 —
Silicious acid: 0,19026 —

2. Saline bases:

Lime: 3,897848 grains
Magnesia: 0,67849 —
Soda: 23,8902295 —
Potash: 0,75912 —
Alumina: 0,40974 —
Oxyd of iron: 0,042 —

A common pound of water of the Kochbrunnen, consequently, contains, upon a stoechiometrical calculation, the following saline component parts:

Magninchlorat . . 0,70 gr.
Carbonat of lime . . 1,65 —
Carbonat of oxyd of iron 0,078 —

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informed of the particular procedure observed by Mr. Kastner in analysing the thermal waters of *Wiesbaden*, *Ems* and *Schlangenbad*, they are referred to: *Kastner's Archiv* l. c.

Sulphat of soda . .	0,70 gr.
Sulphat of lime . .	0,12 —
Calcinchlorat . . .	5,18 —
Magninchlorat . . .	0,79 —
Kalinchlorat . . .	1,20 —
Natrinchlorat . .	43,741 —
Aluminsilicat . . .	0,60 —

There appeared, farther, small quantities of:

Calcinfluorat.
Barytcarbonat.
Kalisulphat.
Kaliphosphat.
Alkalijodat.
Magninbromat.

Brom was found by *Kastner* in the water of these hot springs by following the procedure of *Balard,* the discoverer of this simple substance, passing chlorgas through the saline residue left after evaporation and dissolved in water. During the absorption of the chlorgas the fluid assumed a yellow colour, and, when shaken threw up a yellowish scum, emitting at the same time a vapour of the same colour. Ether being poured upon it, assumed a dark-red-yellow colour. When treated with lye of soda, the hydro- and oxy-bromat of soda produced by this operation, when manganese and sulphuric acid were added, evolved a red-yellow vapour, which in the recipient was condensed into a fluid of a hyacinthine hue, emitting a smell peculiarly nauseous. This

fluid did not turn a solution of starch blue, nor trouble a solution of sal ammoniac, exhibiting, in general, the properties of *Balard's* Brom.

Mr. *Kastner*, moreover, found 1,75 gr. of *organic extract.* This substance he extracted by means of watery alcohol, and having freed it from the salts still adhering to it, dried it in a very gentle heat. Wishing, however, to exhibit this substance in a state unaltered by heat and air, and thus to ascertain its real nature, he evaporated a common pound of water of the Kochbrunnen under an airpump, in an apartment inaccessible to the direct light of the sun, treating the residue first with pure, and afterwards with watery alcohol. Then the latter extract was evaporated in the same manner, and the saline parts separated. This treatment with watery alcohol was repeated until a substance remained, distinguishing itself by the following properties:

1) it dissolved easily in water; less so in diluted, and not at all in pure alcohol;

2) the watery solution, when made to boil, did not develop a matter distinguishing itself by any striking smell; it resembled in some manner in taste a watery solution of animal gluten, and, after having been exposed for a fortnight to the air of a heated apartment, became *sourish*;

3) this substance, however, acted neither

on acids, nor on alcalies; but being exposed to the action of galvanism, verged to the pole —E; which was not, however, the case, when it, with the addition of some acetous alumina, was exposed to the action of galvanism (the acetous acid then making its appearance at the pole +E). During this operation part of this extract was always decomposed by carbonic acid and ammoniac. The same experiment being made without the addition of alumina, a complete decomposition took place, whilst it was very evident that the two afore mentioned saline component parts, capable of forming carbonate of ammoniac, were produced. At the same time *traces* of a troubled substance were separated at either pole, which, however, was so trifling, as not to admit of any farther examination;

4) heated by itself in a spoon of platina, this substance extended in bulk, and, when reducing to a coal, gave out a smell like that of burning horn, betraying, at the same time, very plainly the presence of ammoniac;

5) 1,75 gr. of this substance were decomposed by means of oxyd of copper (after *Döbereiner*), in 0,44 of oxygen, 0,13 of hydrogen, 0,03 of azot, and 0,88 of carbon.

„This substance probably is a mixture of two different organic component parts, one of which is somewhat like the jelly of isinglass, and the other of the thermal springs of Wies-

baden, coming nearer to Osmazom, of that of Ems, however, to that of vegetable gluten, as some later experiments with the latter, relatively to the effect acetous acid and cold alcohol had upon it, seemed to prove, whereas the extract of the thermal water of Ems treated with the former, was for the most part, that of the water of Wiesbaden completely, dissolved in it, and the former, when cold alcohol was poured upon it, swelled, and when heated to a boiling degree, dissolved in a small proportion, but whilst cooling became muddy again *)."

Mineral water leaves in the conduits by which it is conveyed, and in the vessels in which it is evaporated, a settlement in proportion as its free carbonic acid (as they call it) is devoloped. This sediment, according to Mr. *Kastner's* observation, consists of oxyd of iron, a small quantity of carbonat of lime, alumina and very little sulphat of lime. It has a saltish taste and a yellowish colour, resembling that of oker.

Some time after this discovery of Mr. *Kastner,* professor *L. Gmelin* also discovered *fluor* and *mangan*, the latter in great quantity, in this spontaneous precipitate of the thermal water, which, when treated with borax produced a glass that appeared of a violet colour in the dark.

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*) *Vid. Kastner l. c. S.* 525.

By a later analysis of this sediment, Mr. Kastner discovered magnesium, silicin-acid, strontites, brom and some traces of jod *).

The results of the analysis of mineral waters, in general, though obtained by celebrated chymists, does not afford clear notions either of the undisputed component parts, upon the whole, or of the nature of the union of the bases and acids. Mr. *Kastner* himself is of opinion, that it is highly probable, that, *if isolated salts really should be contained in the thermal waters of Wiesbaden,* they did *differ in not having,* properly speaking, *any sulphate of lime; but muriate of lime and sulphate of soda* **), and that only when

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*) Considering this we may conclude how far the author of the treatise: „*Wiesbaden und dessen Heilquellen, W. b. Schellenberg,* 1823," is correct when he maintains that there are medical and chymical reasons, why the soap known by the name of *sinterseife,* manufactured from the sediment of thermal water, is inadmissible. —

**) The strong resolving and purging effect of the mineral water of Wiesbaden which by no means corresponds with the results of the analysis of them seems to place this beyond all doubt.

Schweigger is of a like opinion, when referring to the above mentioned experiment with the water of *Töplitz,* which I made jointly with *Reuss* and *Seiler*. He believes, that in tepid mineral waters the component particles of salts are more intimately united in a common whole, and only at a cer-

evaporating they decompose each other reciprocally into *sulphate of lime and muriate of soda.* He questions, however, the presence of isolated salt in thermal water, and is rather inclined to believe that he may conclude from the results of the analysis, that all the saline component particles of the water are united into *one* specific salt.

It might, however, be conjectured, in opposition to this ingenious idea, that mineral waters are not at all composed of salts, but form an animated whole (*totum sui generis),* totally inaccessible ty chymistry, because it cannot obtain any access before the unity is destroyed and the dismembered component parts are overcome by cosmic powers. Such investigations however (as I shall point out more at large in the chapter following), *assisted by solid experience,* are of great value, and we may hope to be obliged ere long with the details of Mr. *Kastner's* important researches.

The temperature, the specific weight, the quality of acting as a galvanic conductor, the brothlike taste (probably [?]) arising from de-

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tain reduced degree of temperature. are combined into those binary salts, in which state they are found by chymists; and that during this process an evolution of caloric is taking place. (L. Gmelin in *Poggendorf's Annalen der Physik u. Chemie, Ed.* VII. p, 460.)

composed organic extract and muriat of soda), the calcareous smell, as well as the reaction against the proper chymical substances, peculiar to the thermal water of Wiesbaden, are invariably alike, both in spring and autumn.

Mr. *Kastner* has not as yet been enabled to determine whether these springs be liable to any changes by earth-quakes or volcanic eruptions in the neighbouring countries. Thunder storms, at least, do not cause any difference.

„As to the relation of living organisms to our thermal waters," says Mr. Kastner (in his: *Archiv für die gesammte Naturkunde, Bd.* XVIII. *No.* 4.)," I have made the following observations: *withered leafy stalks of blossoms* of the same variety of garden-flowers, having been kept, from the moment of gathering, for an equal length of time, in the same room, sheltered from the direct influence of the solar light, did, indeed *recover more slowly,* but *evidently more completely in the water of the Kochbrunnen* than in an *artificial imitation of it,* and in *destilled water* of the same temperature. The *thermal water of Ems*, compared with warm springwater, and that of the *Schachtbrunnen of Schlangenbad,* compared with destilled water, had a similar effect."

Similar results were obtained by Mr. *Ritter,* at an earlier period, and it is interesting

to observe how chymistry, on the very threshold of organic nature, by an impartial judge is repulsed to the limits of its researches and conclusions.

With regard to the copiousness of solid parts in the thermal waters of Wiesbaden, Mr. *Ritter* observes *):

„Comparing the chymical analysis of all warm muriatic, and even of sulphuric springs, examined hitherto, we find that the richest spring of Wiesbaden contains not only muriate of soda and muriatic neutral salts, but, in general, a far greater quantity of solid mineral particles, than all other warm and cold springs known. Only one of the seven porrectonic springs in the *Apennines,* and that of *Ali* in *Sicily* (both warm ones), and the famous cold springs at *Seidschütz,* in Bohemia, contain a greater quantity of mineral substances.

In order to prove his assertion, the same author, communicates in his excellent work a table of the richest springs with their mineral contents, a small extract from which I shall subjoin. The calculation is founded upon the scale of 7,500,000 decimal pounds, the survey being facilitated by this expedient.

The spring at Baden, in the grand-dutchy of this name . . . . . 0,023437.

*) l. c. p. 219.

The springs of Hercules near Mehadia in Hungary (according to Stadler)	0,043075.
The spring Pozetti, near Pisa (Santi)	0,023437.
The superior spring of Burtscheid (Kortum)	0,028319.
The boiling spring at Carlsbad (Becher)	0,023437.
The main spring at Töplitz (Ambrozzi)	0,007812.
The spring of Rykum, in Island (Klaproth)	0,002766.
The strongest spring at Bath in England (Lucas)	0,017144.
St. Amand, in Flanders (Boulduc)	0,012562.
Bagni della Poretta (Bassi) .	0,064127.
Ali, in Sicily (Andria) . .	0,361979 (?)

Comparison of some of the richest cold mineral springs with those of Wiesbaden.

Nenndorf (according to Brockmann)	0,014701.
Spa, spring of Pouchon (Limbourg)	0,004337.
Pyrmont (Westrumb) . . .	0,015625.
Brückenau (Zwierlein) . . .	0,05480.
Seidschütz (Reus), the richest of all mineral springs even employed for medicinal purposes	0,297417.

The richest spring at Wiesbaden (Ritter) . . . . . 0,959027.

The absolute weight of a cubic foot of the purest water of 70^0 of the centesimal scale is 64,5457 common pounds. A cubic foot of water of the *Kochbrunnen* of the same temperature = 64,7783 pounds.

The absolute weight of a cubic foot of the *purest* water of $18^3/_4{}^0$ of that scale is = 66 pounds; that of one cubic foot of the Kochbrunnen, of the same temperature = 66,4970 pounds.

The total quantity of water issuing from the hot springs of Wiesbaden in 24 hours, amounts to 84,092 cubic feet. It we add the produce of several newly discovered springs not measured as yet, we may calculate the mass of the solid component parts of all the mineral springs of Wiesbaden at 50000 common pounds, at least, in 24 hours, which in a twelvemonth amount to the enormous sum of, at least, 18,250,000 common pounds.

This water will keep many years in well-corked pitched stone bottles, without spoiling or growing muddy. A bottle being opened after 18 months, a small explosion of carbonic gas was perceived. It is, of course, fit for being sent to great distances; and large quan-

tities of bottles have been sent frequently to Sweden *).

There are many cold mineral springs at Wiesbaden, yielding the same component parts as the warm ones, though in a considerably smaller proportion. No azotic gas was found in them.

*) *Ritter* l. c. p. 173.

CHAPTER VI.

On the manner of action of mineral waters.

Ἄριστον μὲν ὕδωρ.

PINDARI Olympia I.

LEAVING to professional chymists the decision of the question whether mineral waters, as far as they are objects of analysis, may be said to contain imponderable substances, I shall confine myself here to a few remarks on the manner in which they affect the human frame, as far as they are the result of observations made at a much frequented watering place in the course of many years. I shall, however, for brevity's sake, in my exposition make use of an aphoristic style. The medical application of mineral waters is attended with different results when drunk and when used as a bath. There are diseases in which the *bath* completes the cure, whereas the internal use of the water would prove hurtful,

and *vice versa.* There are also cases requiring that the water should be applied both externally and internally, the effects of one mode of application being supplied and improved by the other. In treating of the sanative effects of the mineral water of Wiesbaden, it will, thus, be proper that I should speak separately of their external and internal use.

A. Of the effects of mineral waters in general.

Chymistry enumerates a series of substances, of which it pretends to maintain, that they form component parts of mineral waters. This is justified by the observation that these substances, when separated from their vehicle (the water in which they are found) produce effects *analogous to those of mineral water when it is drunk:* Thus do sulphur, salts and iron, when separated by chymical analysis from mineral water, and used as medicine, produce nearly the same effect as the mineral water in which these substances were contained. Although these observations do not satisfactorily explain the *manner* in which mineral waters act, nor sufficiently account for their *healing power,* they *indicate,* however, *their general character,* and prove *that mineral springs are capable of producing effects analogous to those arising from the*

use of material medicines, in as much as they contain ponderable substances capable of being analysed.

Mineral springs, considered in this respect must be accounted material medicines, acting within a limited organic sphere upon individual organs, or systems, the latter of which react in proportion to their greater or less physiological importance upon the whole organism in general. Pharmaceutic remedies, which frequently affect the organism as poisons or destructive powers, and in no wise directly cure diseases (except perhaps some specific disorders, in which they are applied as specifies), to which they are opposed; they can only give to or take from the body some vital principle, arrest excessive vital energy, or reanimate and quicken the stagnating stream of life and thus by their activity aid the healing plan of nature prepared already according to necessary laws. *The cure itself is an operation proceeding from the most hidden springs of life; it is the result of the tendency of the powers of nature to recover their equilibrium.*

This mode of action of mineral waters, corresponding with pharmaceutic remedies, manifests itself principally when they are used *internally* as a medicinal beverage.

The standard, however, offered by chymistry to enable us to *estimate the degree of*

sanative power peculiar to mineral waters proves itself completely insufficient and defective, when we observe the efficacy of their component parts out of their union with the water from which they were separated by art. A grain of iron dissolved by the hand of nature in the water of *Schwalbach* or *Pyrmont*, is by far more efficacious, when drunk, than six, nay even ten grains of that substance prepared officinally; a grain of bitter salt in the water of *Seidschütz*, is more efficacious than half an ounce of it from the apothecary's shop.

These and similar observations, many of which I shall mention in another place, constrain us to admit of the existence *of a peculiar vital principle in mineral waters, communicating to that of the body either an attractive faculty more consonant with the medicinal component parts of the water, or acting by itself already as a healing power upon the diseased organism.*

According to this, hitherto hypothetically presumed, presence of a vital principle in mineral waters, it may be comprehended how the chymical component parts, as they are called (which, if mixed with common water, would be far less efficacious), are the more readily assimilated, the more powerfully the tendency of nature to effect the removal of the cause of disease, is excited by that vital principle.

This enlivening principle, on the other hand, acquires, in return, by means of the mineral water and its component parts, the property of uniting with the organism. Thus it is evident why all mineral waters, when drunk, besides their individual effect, produce, by means of their constituent principles, a *general* sanative effect, which is sufficiently proved by experience.

Hence we also comprehend how it happens that ferruginous waters, thermal or sulfureous waters, are by far more efficacious than all chymical preparations of an analogous nature, and how, in many instances, the effect of mineral waters never can be obtained by artificial means. The partial effect of the medicinal component parts of mineral waters is pushed back, as it were, retreating under the aegis of a general power which directly excites the autocracy of the animated animal body and *compels it to act according to the particular quality of the mineral spring determined by its component parts.*

B. *On the manner of action of warm mineral baths.*

The preceding inquiry into the manner in which the internal use of mineral water acts upon the human body, has made it appear, that this action may be considered in a two-

fold point of view. In one respect mineral waters may be viewed as belonging to the class of pharmaceutic medicines, and that the component parts separated from them by chymical analysis, afford an *approximating* standard of their sanative virtues. We then discovered in them a dynamic *) manner of action, not proceeding from any ponderable or material substance, but from a power having for its vehicle the assimilative form of the water and its chymical component parts, and exciting to greater efficacy.

We must, indeed, look upon mineral water as an unity which in each point of the development of its power acts cojointly with all the powers decomposed by analysis, for the purpose of rendering the notion of its efficacy more distinct and perceptible; it must, however, be allowed, that mineral waters, in their rapport to the animal organism, *through the diversity of the organs to which they are applied* (the *skin* and *intestines)*, effectually experience a like difference in the manner

*) All effects that are not mechanical, are dynamical. Matter, as such, does not act at all; it is put in action only by the power that animates it. Hence, strictly speaking, the term „dynamic manner of action", is incorrect. I must, however, beg leave to make use of it here for the better distinction of the two different ways of action of mineral waters.

in which they act, viz: a dynamic and a material one, determined by the vivifying principle adhering to them. *The human body,* therefore, *itself effects this difference in their manner of acting, according to the use made of them either as bath, or as beverage.*

It is an undeniable fact that, when mineral waters are *drunk,* their material medicinal character is more perceptible, or rather, is rendered more manifest, by the organism itself. But this appearance evidently depends on the most important organ of assimilation, the stomach and its nearest dependencies.

By this means, then, mineral waters form a complete union with the internal parts of the body, and produce the effect assigned to them by their *material* and *medicinal* side. If we wish to form a correct judgement of the real nature of mineral springs, whose water is applied internally, nothing is, consequently, more important than the knowledge of their constituent principles.

This is not the case with regard to *naturally lukewarm mineral* or *thermal baths,* and the appearance we observe when they are applied, presents to us rather a dynamic manner of action of the mineral spring, and it is to them, it seems, we have chiefly to look for a proper illustration of our assertion:

a) that thermal waters possess a peculiar vitality; and

b) that it is owing to the influence of the latter, that the autocracy of the organism of the human body is excited and that thus the cure of its disorders is brought about.

Alibert *) deems himself authorised by solid experience to observe: *„on voit des eaux minérales avec des principes différens opérer les mêmes guérisons, et agir d'une manière identique dans les mêmes maladies.“* This excellent physician might have added, that mineral *baths*, in particular, afford us frequent opportunities to make this observation.

To what cause, now, are we to ascribe this correspondence of action observed in a great many mineral springs differing from each other in their constituent parts? —

The latter cannot cause this effect; for we do not see how the same pharmaceutic means, whose action is invariably the same, can cure diseases of *a nature specifically different*. Nevertheless, there are some physicians endeavouring to justify their observations by the results of chymistry, believing that the *diversity* of the constituent parts could clear up this mystery. When, for instance, an erysipelous cutaneous disorder is cured by the use of warm mineral baths, they

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*) *Précis historique sur les eaux minérales les plus usitées en médecine etc. par J. L. Alibert. Paris* 1826. *Prolégomènes* No. XV.

are inclined to account for the cure by telling us, that the diuretic property of the thermal water, owing to the presence of muriatic and carbonic acids, united with their purgative quality, had produced a counter-irritation in the skin, and thus cured the eruption, the salt having served as a desiccating and purifying remedy.

Many symptomatic cures of this kind, may, doubtless, occur in the course of medical practice; the patient, however, has no reason to congratulate himself on that account; in as much as the disorders consequent to his cure, commonly are of a more serious nature than the original disease. As for myself, it has never occurred to me that, when a cutaneous eruption was cured by the use of mineral baths, other diseases, which necessarily must take place after the symptomatic cures of which I have spoken, were the consequence of such cures *).

Granting, however, that mineral baths should have cured cutaneous disorders in the manner mentioned above, how are we to account for those rare and short-lasting eruptions *produced* by the bath, whilst it cures other disea-

*) It is, indeed, very remarkable and justifies our assertion that consecutive diseases, after cures effected by thermal baths, properly conducted, never took place.

ses, as, f. i., the gout? how are we to explain the case of habitual violent perspirations being reduced by the application of thermal waters, whilst they at the same time afford effectual relief in diseases brought on by a check of transpiration, by again putting the latter in activity? These are manifestly opposite operations of the skin which are caused and made to disappear by the very same means. Now, if thermal waters, applied internally and externally had removed the *cutaneous eruption* by their diuretic or purging property, how, then, can the very same means *produce an eruption,* and, consequently, *cause* an operation which the abstergent and drying nature of the water *must have prevented?* — and either takes place, whilst the patient, perhaps, is bathing, drinking and living after the same rules.

It is but rarely that we observe that bathing only in thermal water produces appearances that justly may be attributed to the peculiar constituent parts of the water, though (as *Springsfeld* observes) the quantity of water absorbed in each bath might be supposed to have amounted to some pounds. We observe only a slight effect of a chalybeate water, when, for instance, in chlorosis, the act of sanguification is morbidly affected, or a defect of the principles of nutrition exists. Here the organism demands the internal use of ferrugiuous acidulae, and a supply of material

principles. Every one knows that chalybeate baths are very efficatious in such cases; but they produce a general excitation and provoke appetite, which renders them conducive to obviate indirectly the vital languor, by encreasing nutrition. In this case the proper effect of iron, in as much as it is to act upon the economy of the body by means of baths, will always be found to act an accessory part.

Stoppages, infarctions and obstructions in the internal organs absolutely require the internal use of resolvent mineral water, and these diseases are treated *less successfully* by the application of *baths* of the same water alone.

There are, however, also many diseases, for instance, such as arise from a morbid state of the nervous system in general, or from an irregular dynamic rapport of individual systems to each other; many idiopathic exanthemata, paralytic affections etc., that never can be cured by the internal application of mineral waters, though it is possible that it may contribute to *accelerate* their cure.

The skin is less disposed to be affected by external medicaments than the intestines whose structure is peculiarly fitted for the reception of alimentary substances. Hence, mineral waters seem to undergo a considerable change on the surface of the body, and before they are received by its internal economy; no matter whether this be owing to a decomposition or a

filtration of their component parts, by which at least part of their fixed substances is precipitated upon the skin. Look at a body that has been immersed about three quarters of an hour in a bath, which, like the thermal water of Wiesbaden, contains a great quantity of mineral substances. In the moment of emerging from it, you behold many small streakes of water running down the surface of the body, which have a cloudy, and frequently brownish appearance; the skin is clammy to the touch and, when it is rubbed down, the linnen used for this purpose is stained; nay, even when this is done most carefully, the body-linnen worn in the day, is stained, more or less, in the same manner.

Sea-water, when drunk, provokes a violent thirst; whereas it quenches it, if you bathe in it — a phenomenon evidently confirming the assertion, that mineral water, previously to its being absorbed, undergoes a decomposition, and acts differently when used as a bath, and when drunk.

These facts manifestly justify the assertion that the influence of the constituent parts of mineral waters is very little perceptible, when used as baths, *except when used in cutaneous diseases purely local.*

Resuming my comments on the above mentioned assertion of Mr. *Alibert*, I may be allowed to ask:

1) whether this powerful influence of mineral waters upon the cure of the most obstinate diseases must be attributed to the water as such; or

2) to the natural warmth characterising it, or to a certain degree of its temperature; or

3) to a change of the relations of the patient, to the amusements, the comforts of life etc. generally to be met with in bathing-places?

It is an important axiom in physics, that: *corpora non agunt nisi fluida*, and the liquid form is undoubtedly best qualified to manifest the communication of the whole power of such substances. This power thereby obtains access to the organisation of man and enters into its functions. As in the external world all that is to exist develops itself from a liquid form, so must also the principles of nutrition be changed into it, in order to be rendered assimilable, and all substances become unfit for supporting life, must quit the state of rigidity, and turn liquid, before they can be driven out of the region of organism. Thus water evidently *acts in many diseases as a sanative means,* and nature *avails* itself of it in many dispositions of the body in which the humours have a tendency to grow rigid and condense.

But how important soever the task may be which nature has assigned to this element, we cannot attribute to common water the powerful efficacy we discover in thermal waters.

Experience has decided this long since and taught us that it *does not possess* this healing power, that it is insignificant, nay even hurtful, in many chronical diseases, whilst thermal waters only can effect a cure.

By advancing this assertion I will not, however, deny that common domestic baths possess composing and antispasmodic properties; in febrile disorders they even appear to be preferable to thermal bath, when the specific reaction peculiar to mineral waters is to be apprehended.

Diel, Kreysig and other distinguished physicians are inclined to ascribe the efficacy of thermal water to the degree of the temperature of the bath, carefully modified according to the individuality of the patient, maintaining at the same time that mineral water, when used for bathing, also acted in proportion to the medicinal value of its component parts. I am not disposed to deny this assertion, though I believe to have sufficiently shewn in a former place that in mineral baths the component parts act only in a secondary manner.

As for the choice of a proper degree of the temperature of baths, its importance has been acknowledged long since; but we cannot discover in it the principal cause of the efficacy of mineral baths; for if the cure were to be attributed to it, journies to bathing-places would be superfluous, because patients

might at their own homes much more easely command the proper degree of the temperature of their baths, than in bathing-places. However we frequently find that after frequent repetitions of tepid domestic baths, prepared with the strictest regard to a proper degree of temperature, the patient is very often obliged to repair for the complete recovery of his health to a bathing-place, where the choice of a proper degree of temperature is attended with greater difficulty, and where the chymist scarcely can discover a slight trace of component parts, as they are called.

But what does experience tell us of the value of a proper choice of temperature in baths in general? — It tells us that baths heated to a proper degree are the most powerful means to produce equilibrium in the abnormously exalted or depressed activity of the nervous system in the different organs of the body; that they remove partial congestions of blood in individual parts of the body; that they check the immoderately accelerated circulation of blood, unless this circumstance should be owing to an acute inflammation or some organic defect. But experience does not tell us that *common* tepid baths effect such great cures as we see produced by the use of thermal baths frequently very deficient in component parts. It tells us, on the contrary, that natural mineral baths, when used for some time, in many

diseases produce an excitation really critical, frequently raised even to a febrile state, which in most cases is the precursor of speedy recovery. In vain do we look for this result from the use of common domestic baths, though we should regulate most carefully the degree of temperature. They can give rise only to the appearances produced by *excessive* bathing, but never cause those critical motions a practised eye will discover at first sight. The two groups of symptoms are minutely described in a subsequent chapter. The appearances attending critical motions resemble in some degree those produced by baths taken too hot, with this difference only, that the latter frequently are more violent and dangerous, and of shorter duration *).

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*) Already many years ago I asserted that mineral *baths,* if properly taken, excited the reproductive process of the body, and thus contributed to restore the patient's health. Unexceptionable as this assertion may be, it does not, however, account for the whole phenomenon of the manner in which this is effected, and we are still to learn by what *means* mineral-baths produce this effect? — If it be owing to the component parts, then it must be demonstrable; — if the temperature of the water — or the latter as water, were the sanative principle, why then should not numerous domestic baths, administered with the greatest care, have produced the desired effect, whilst it was brought about by, perhaps, only 25 mineral baths? — Thus

The opinion adopted by some eminent physicians that the sanative power of thermal waters principally depended upon their *specific warmth,* will be sufficiently characterised by the term: *„specific“;* for experience teaches us that the warmth of common water is not distinguished by any remarkable effect; yet whereever warmth manifests itself, it is a proof of the internal activity of the body. The term *„specific warmth“,* therefore, would prove only that warmth was the vehicle of a power peculiar to thermal springs, the existence of which we are to ascertain more particularly. It is also difficult to comprehend, why warmth rather should be the vehicle of this power than the water itself with its component parts.

The objection deduced from the medicinal and psychical influence of the external and internal use of mineral waters in watering-places,

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we are obliged always to recur to something of a *specific* nature in the efficacy of mineral baths. — How does it, finally, happen that (a fact that cannot be questioned) some mineral springs, in certain diseases, are heating, though the patient should not continue long in the bath, whilst the very same patient can remain much longer in a bath of other thermal springs, without being heated, whilst his bodily state continues to improve? In clearing up this mystery the component parts of the water and their quality cannot reasonably be brought into the account.

is sufficiently rated in Ch. XXII. The journey, the change of residence and relations, the amusements peculiar to watering-places etc. are undoubtedly powerful means of *exciting the autocrasy of nature,* and many sickly persons, threatened by the visitation of serious deseases, will certainly be restored to health by them, even without the medium of mineral water. But this does not authorise us to establish as a general rule what proved beneficial in some individual cases. We find, on the contrary, that the majority of patients afflicted with violent disorders, receive more injury than benefit from such new relations. The very idea of the journey frightens them already; and when they, wrapt up in their beds, tortured by pains and exhausted by numberless inconveniencies, arrive at their journey's end, the consideration of their situation causes them additional uneasiness. Separated from the dear objects of their affection, deprived of their tender and careful assistance and of their accustomed domestic comforts — they are in a state of painful suffering carried into the bath — are frequently left for many hours to the tediousness of their solitary chamber, and, being rendered incapable of enjoying the amusements and pleasures they had expected to be partakers of, their time passes on heavily and they become a prey to lowness of spirits, which frequently is aggravated by pecuniary distress. It should

seem as if their adverse fate intended to overwhelm them with all kinds of misery — nevertheless we see them gradually recover, and at last return to their domestic comforts completely relieved from all their ailings.

Dr. *Ritter* presumes that the majority of patients resorting for relief to thermal springs, had contracted their disorders by a checked transpiration and that their virtue principally consisted in a tendency to restore this function of the pores. However, if the nature of the disease required nothing but the restoration of a checked perspiration, vapour-baths must be the most powerful means of effecting it, and the patients visiting thermal bathing-places, must be ill in consequence of a *checked* transpiration. But this is so far from being the case, in general, that it rather appears that many of these patients frequently are afflicted with too easy and profuse a perspiration, and nevertheless continue being ill. They now have recourse to the use of thermal baths, their profuse perspiration diminishes; they gradually become capable of greater exertion without perspiring immoderately, and nevertheless recover their health in a short time. The success of such cures, consequently, must be owing to something else besides the simple restoration of the checked function of the pores.

It might be, farther, objected „that thermal waters did cure *such* diseases as arose from

some external or internal common cause, by removing it." This objection evidently is the strongest, because he that makes it might call to his aid obscure aëtiological hypotheses.

We do, indeed, discover this physiological connexion in many diseases cured by the use of thermal baths, as well as their primitive common causes (which is particularly the case in diseases cured by the drinking of thermal waters); but surely not in *all*. Show me the connexion of a paralysis occasioned by a momentaneous exhaustion with that which is owing to contagion — both of which may be cured by the same thermal water-between the monthly courses of women retarded by local causes, and an obstructed perspiration brought on by a cold etc.

In many disorders of this kind we discover no organic connexion, except in the general impellents of organism, from which the individual organic life, together with its various functions, originally proceeds. These impellents may be said to be the primary sources of animal life, and the immediate depositaries of the organizing and life-preserving primary principle of the body. The latter, however, is the very principle from which the autocratic movements of organism proceed. The above objection would, therefore, serve only to confirm our notion of the manner in which thermal waters act.

If we, finally, cast a look at the phenomena, so frequently contradictory, presenting themselves to an attentive observer, at very frequented thermal springs, viz: those of Wiesbaden, our assertion respecting the manner of action of natural tepid mineral baths, will become still more evident. It will, I presume, be readily allowed that this view only enables us to comprehend the truth of *Alibert's* assertion: „that identical diseases, presenting the very same phenomena, are frequently successfully removed by means of thermal waters of chymically different principles."

We see frequently, for instance, that by bathing in the same tepid mineral water an excess of transpiration nearly grown habitual, is cured, whilst in another patient the same secretion is *produced* upon a skin as dry and rough as parchment. In one instance exanthemata are *produced,* whilst, in another, they are made to *disappear;* over-copious courses are reduced in one female, whilst another takes the same bath for the purpose of provoking them, both gaining their end *).

Let us, farther, consider how the waters of Wiesbaden act in particular disorders, f. i.,

*) It is really unaccountable that cases of this kind, frequently occurring in each thermal bathing place, have not been collected long ago, as this would considerably illustrate the manner in which natural tepid baths act.

in hemorrhoïds. A periodical hemorrhoïdal flux, if neither too violent, nor too weak, nor attended with accessory painful symptoms, is not affected at all by these waters, if indispensible for the conservation of the animal economy. Should it, however, endanger life, f. i. by too copious a loss of blood, violent cholics etc. then the waters of Wiesbaden will remove these alarming symptoms — provided they be properly administered, and not applied too warm — the flux of blood is reduced, if too copious, and encreased, if too sparing, or disappears entirely, if the economy of the disorder require it. When this is the case, the retarded hemorrhoïd secretion also appears again, if it may not cease without injury. —

Here we must also refer to those grand and undoubted cures effected soon after the application of thermal waters (the secondary cure, as it is called). We frequently observe, that the patient does not mend, whilst using the mineral water, nay, that he leaves the bathing place, fancying that the water had affected him too violently, or urging various other complaints — whilst in a few weeks or months after his leaving the bathing place, he is completely cured of all his ailings. I shall, in the course of this work, adduce many instances of this kind *).

*) The reader is requested to take notice, that

How are we to account for these phenomena? Is it owing to the component particles of the water, that in one instance too copious perspiration is reduced, and, in another, suppressed perspiration is removed? that in one patient they cure eruptions, and in another produce them? that in some cases they provoke stagnant monthly courses, whilst, in others, they check them, when too copious, and thus arrest the progress of incipient consumption? Is it owing to the degree of temperature of the bath, judiciously modified, that in bathing places such effects are produced, whilst it was ineffectual at home? No more satisfactory are all the other explanations, mentioned in a former place, to account for this phenomenon. If we impartially consider these phenomena, apparently so contradictory, both with regard to their form and their cause, we feel ourselves constrained to endeavour to account for them in a different way.

A careful observation of *nature* will necessarily lead us *to view these sanative effects*

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it is not only in complicated disorders, but frequently even in very simple diseases, that we often are completely unable to predict *what* phenomena will take place during the use of the bath, and *what* course nature may take to effect a crisis. In such cases the prognostics of the most experienced physicians prove fallacious, especially when the action of the constituent particles is calculated upon.

as the result of an internal operation of nature, and to allow, *that these thermal waters are indued not with a partial virtue, like that of their component particles, but with a general power capable of recalling the vital energy paralysed or suppressed by the disease, and of restoring to it its original efficacy.* This very frequently takes place, by means of excitations more or less violent, sometimes even rising to a febrile state, which present themselves as excitations really critical, and generally are attended with material secretions *).

Without referring to these ideas we should not be able to account for the surprising cures effected at Wildbad, Baden-Baden, Pfeffers, Leuk, Schlangenbad etc. whose waters are very deficient in fixed particles — cures that cannot be expected to result from the use of common water.

This notion alone throws some light upon

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*) This excitation is, however, by no means incident to all patients restored to health by bathing in, or drinking, thermal water, and I shall relate in the course of this work many cases of patients that were severely afflicted, and not subject to it. The assertion, therefore, that the cures effected by the use of mineral waters, are brought about by these critical excitations (which properly are only the means employed by nature), requires great restriction.

the surprising results of secondary treatments, as they are called, which, otherwise would appear to us completely unaccountable. Read only with attention (chap. XVI.) the highly remarkable case of an almost instantaneous cure of the dreadful consequences of arsenic swallowed by a young woman, *subsequently* to her having used the waters of Wiesbaden, and then ask yourself impartially, what can have been the cause and the means by which this cure was effected. I am sure every enlightened physician whose mind is not biassed by the chymists of our age, will allow that it cannot be accounted for satisfactorily, unless we recur to the explanation given in a former place.

It is, consequently, clear, that the effects of natural tepid baths principally distinguish themselves from those resulting from medicines, in this particular, that whilst the latter act only on some systems, the former affect *all* organs of the body, and restore the patient's health by exciting the vital powers, not in individual parts (like pharmaceutic medicines), but in the entire organism, and thereby effect convalescence.

We might, therefore, in some regard, call mineral waters secretions of the earth, assimilable conductors of the organizing terrestrial power, which adheres to them in a state of concentration, until they are deprived of it by some grand cosmical influence.

These observations on the manner in which thermal waters act might be thought to justify the query: whether any disease may be cured by means of tepid mineral baths? — *This query must, however, be answered in the negative.* — All natural powers are limited in their activity, of course that of thermal waters cannot be boundless. On the other hand, the vital power of the body, bound by disease, itself is finite, while the signs of the autocrasy of nature are intimately connected with their organs, which can be put in action no more by the impulse they receive. We have also to observe, that the effect of thermal waters cannot manifest itself before the lapse of some time, whence they rarely are applicable in acute disorders, because the latter cease before the water can develop its sanative power. The use of thermal water generally is injurious in lasting fevers because the bodily excitation is already too violent of itself in these disorders, and the impulse of mineral water would only serve to encrease it. Natural tepid baths are, farther, noxious, in cases when the disease has imparted to the organism a change or tendency rendering the absorption of water hurtful, f. i. in dropsy with fever, in inveterate cachexies etc. etc.

The preceding observations prove that what I denominate the *vivifying principle*, or the *peculiar vital power* of thermal waters, must, as to its essence, be referred to a *general power*

of nature which by the favorable form of the water is encouraged to exercise a *general* influence upon the human body *). Suffice it, to have directed the attention of my readers to the influence of this Archaeus, in a medical point of view, with reference to undeniable facts, leaving to natural philosophers the task of investigating this subject more at large, according to the principles of their science. It will be obvious, however, that I set no value upon what professional chymists might have to advance on this subject, and that I disclaim beforehand all their comments on it, our respective spheres of observation being very little analogous. They have got in their alembics and crucibles only the *disjecta membra* of some lacerated body, and regard as a mere

*) Our times afford the remarkable instance of a gradual decrease of the efficacy of a celebrated mineral spring, not attended with any perceptible diminution of the quantity of water it yields, nor a change in its temperature or component particles. I am speaking here of the thermal waters of *Pisa*, famous already in the most ancient times. They seem, therefore, to be affected with an actual adynamy. This notion prevails generally in Italy, and is sanctioned even by Florentine physicians, residing in the vicinity of Pisa. Vid., among others, the interesting memoir of Dr. *C. H. Schmidt*, upon the most generally known mineral springs of Italy, in the first Vol. of the memoirs of St. Petersburg, relative to medicine.

nothing whatever cannot be pent up, or does not submit to a reagens *). Let them, then, await the period, when they shall discover a reagens fit for the solution of the problem in question; we physicians are already in possession of it: — it is the diseased human body.

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*) There are some chymists, in particular, f. i. the aulic counsellor *Struve* (evidently actuated by mercantile motives), who charge us with purposely attempting to involve the origin and efficacy of mineral springs in a magic gloom. However, not to mention that searching the hidden recesses of nature, guided by the hand of experience, is not involving the nature of the object in darkness, but bringing it to light: my assertions are founded upon facts, which must be disproved, before the consequences derived from them can be condemned.

Should any one suspect the notions I have endeavoured to support, to be the result of the prejudices of some medical practitioner at a thermal bathing-establishment, I beg leave to observe, that no professional gentleman in such a situation has, previously to myself, broached the notion of the dynamic nature of thermal springs: it was, on the contrary, originally started by *chymists* of acknowledged superior merit, or *physicians* possessing, indeed, considerable experience in matters concerning mineral springs, but never established in such a situation — or by *naturalists*. The reader needs but refer to what *Wurzer*, *Döbbereiner*, *Kastner*, *Hufeland*, *Steffens*, and others have advanced respecting this subject, already some years ago.

No one, I hope, will suspect me of suffering myself to be tempted to range this power which, besides the component parts, as they are called, viz: caloric etc. in thermal waters acts cojointly with them, with the category of known powers, or to claim for these springs a principle hitherto unknown. What has been said is rather calculated to show, that what I mean by that power, is, according to its essence, to be considered a *general* natural power, which, influenced by the favorable form of water, exercises a general effect upon the human body.

Several phenomena, partly mentioned in the preceding chapter, are actually qualified to clear up this subject; f. i. the influence of mineral water upon the siderometer in the moment of spontaneous decomposition, its influence upon plants etc. — and, in particular upon the diseased human organism. An affinity to the power which is active in *electrical* phenomena, may justly be supposed, if we keep in mind what the celebrated *Oersted* observes, when mentioning his famous electro-magnetical discoveries. This naturalist says: „Having for a long time considered the powers that are active in electricity, to be the *general powers of nature,* I could not but deduce from them also the magnetic phenomena.“ And, in another place: „I repeat here, that by *electrical powers* I mean nothing else but that unknown cause of

electrical phenomena, whether attached to some free matter, or acting as an independent power." *) — Baron *A. von Humboldt,* speaking of electrical eels, observes: „The power that constitutes the invisible weapon of these animals, is excited by the contact of moist heterogeneous bodies and circulates in all organs of animals and plants, the power that, thundering, inflames the immense canopy of Heaven, the power that binds iron to iron, and guides the silent recurrent motion of the magnetic needle — all these powers, like the color of an undivided sunbeam, emanate from the *same* source, and unitedly form a power that pervades all bodies."

*) *Oersted* in *Schweigger's Journal für Chemie und Physik. Bd. II. Heft* 2. *S.* 200. u. 203.

CHAPTER VII.

Of the phenomena commonly appearing when patients begin to take the bath.

When patients begin to bathe, *some individuals* of a particular disposition of body, exhibit certain phenomena, which we must be acquainted with, if they are not to excite great uneasiness — nay, we are frequently obliged to deduce from them dietetical rules and to render them instrumental to effect a cure.

The *majority* of these phenomena take place in some individuals, while bathing in the water of most tepid mineral springs. I have seen them exhibiting themselves in this manner at the springs of Schlangenbad, Canstadt and Wildbad, as well as at those of Wiesbaden. They seem to appertain to the reaction of the body peculiar to thermal baths *). *Warm* and *cold*

*) This is applicable to *tepid* baths only, viz. to such of 85 to 96 Fahrenheit, or 23—28 Reaum.

It is obvious that the baths of Wiesbaden, like all others, even those in common water first affect the superficies of the vascular nerves, and, imme-

sea-baths produce them likewise, and *Vogel* has characterized them extremely well. He says *): „Some persons, after having bathed, were seized with a propensity to sleep, others complained of giddiness, whilst a third class were affected with an oppression of the chest. Some felt a pain in their eyes, while the skin of others began to itch, and actually became eruptive, though I never saw injurious consequences arise from it. The weariness, vertigo, the slight oppression of the chest, and the pain in the eyes ceased, when bathing was continued. Persons thus affected commonly were of a feeble constitution, who, as they recovered strength, scarcely recollected having felt those sensations. Such subjects ought, however, to be particularly careful to observe the rules that may serve to prevent bad consequences. The itching and eruption of the skin were of no consequence, the patients' health suffering no injury from them."

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diately, after the intire nervous system. Hence, they also calm the movements of the heart, and lessen the pulse. You may, therefore, stay in the bath as long as you please, it will never prolong this reduction of the pulse. The water of Wiesbaden differs in this respect from those of Carlsbad and Aix la Chapelle, which are said to quicken the pulse some time after, and thus to excite and heat the system.

*) *Zur Nachricht und Belehrung für die Badegäste von Doberan. Rostock* 1798.

What Mr. Vogel here observes with respect to Doberan is almost literally applicable to the springs of Wiesbaden. I have only to add here different observations, which are the result of frequent experience.

The phenomena above mentioned, for the most part depend on the degree of artificial excitation, not conform to nature, to which the patient was reduced, shortly before bathing, by an over-heating regimen, an immoderate exertion of the muscular system, or moral influence. Hence it also happens that both sick people and healthy persons, coming from a great distance, or having travelled very rapidly to the watering place, are most liable to these inconveniences; for as an *uniform* regimen excites the body only *uniformly,* so must the thermal water, which, according to its essence, tends to restore the natural equilibrium in the movements of the vital system of the organism, reduce the feeling of this factitious energy, and produce those phenomena, which, partly, in return serve to favor the restoration of the equilibrium. This is particularly the case with regard to the propensity to sleep, to bodily rest, and a sense of weariness. I have observed these phenomena in a great number of robust men, who, after the campaigns of 1812—1815 bathed here; especially in such as, being misled by a sense of comfort, remained in the first baths an hour

and more, contrary to the advice of their physicians. After having taken ten or twelve baths, these symptoms, accompanied with an apparent sense of lassitude, disappear, the patient feels himself revived and animated with new vigour. These phenomena may be prevented in some measure, and their duration shortened, when they already have made their appearance, if, what should be a general rule, the patient use the precaution not to remain long in the first baths, and to lengthen their duration *by slow degrees,* taking at the same time frequent, but *gentle,* exercise in the open air. These symptoms are sometimes speedily removed by a bath of aromatic herbs. Many individuals that appear to be very weak, and nearly overwhelmed with sufferings, are often completely exempt from the afore mentioned inconveniences; nay, each time quit the bath refreshed and animated with new hopes.

Vertigo, head-ache, articular heaviness, lowness of spirits, a sense of weariness, a propensity to profuse perspiration, a fatiguing sleep, are also the consequences of hot baths, or air overcharged with vapours, and in many bathing establishments occasion very unjust complaints of the violent effect of the bath, in as much as the same symptoms may be produced by common river-water, when heated to excess.

It happens frequently that already after

the first baths the organism is excited to form depositions upon the skin, or secretions by that organ. The dry, parchment-like skin — grows softer and moist, a prickling is felt on the surface of the body, a slight eruption ensues, though frequently only a redness in particular spots, attended with a sensible decrease of hypochondriac, hysteric, or rheumatic sufferings.

The cutaneous transpiration is, in general, a little more encouraged, the patient perspires more freely; especially, being used to a very laborious mode of life, and a heating regimen, now experiences the above mentioned languors, and, at the same time constrains himself to *considerable* exercise. In some individuals the stools are retarded proportionably to the encrease of the cutaneous or urinary secretions. I have, however, also seen that in spasmodic dispositions attended with costiveness, the functions of the skin and of the intestinal duct were set free at the same time.

Ulcers are by this cutaneous excitation made to discharge, for a short time, a greater quantity of matter; the ulcers of other individuals became clean, desiccated and granulated rapidly in a short time.

Eruptions, especially when treated with salves only, or caused by a checked transpiration, or when they are the consequences of imperfect crises of rheumatic fevers, grow more

violent before they are completely cured; moist tetters secrete a greater quantity of lymph, and these phenomena are sometimes of longer, and sometimes of shorter duration. Cutaneous diseases, which sometimes are owing to an internal disorder, assuming an anthematous form, are commonly liable to undergo this apparent change for the worse at a later period. I shall relate in the course of this work some remarkable cases of this kind.

Another phenomenon, no less remarkable, frequently manifesting itself, in some individuals, already after the first baths, is an encrease of rheumatic and gouty pains. Walking becomes more difficult, stiffness encreases. These slight ailments frequently alarm the unexperienced, though they regularly are very transient, rarely continuing longer than 4—10 days. They are not always the feeblest, that are liable to these inconveniences, such being frequently totally exempt from them, or feeling them only in a slight degree. This phenomenon seems to depend on the energy with which nature strives to recover its equilibrium, for which reason people always esteem it a favorable harbinger of speedy recovery. I recollect a robust country-clergyman, violently attacked by the podagra, who repaired to this place for relief. He could walk only upon crutches. Without having consulted a physician, he stayed in the bath, the first time, longer

than the irritability of his limbs warranted. He was seized with a reaction in his diseased limbs, so violent, as rendered him incapable of walking even with the assistance of crutches. Highly alarmed by this untoward accident, he sent for his physician, who could, indeed, dispel his alarms, but not dispense him from discontinuing the use of the bath, until the excitation of his limbs, having risen almost to inflammation, had subsided. The patient then was allowed to stay in the bath only a very short time, until his limbs were gradually inured to the influence of the new remedy. The patient recovered completely in a short time.

I observed similar phenomena in others, who, being afflicted with an arthricical inflammation of the membranes of the limbs, had repaired to this place and bathed incautiously. In such persons I saw sometimes the irritability of the limb rise to so high a degree as rendered it necessary that bathing should be suspended for some days and cupping had recourse to in order to prevent inflammation.

Even persons who never had suffered rheumatic pains before, felt slight touches of that disease for the first time, when taking the bath, or returned after an interval of some months. These attacks were, however, invariable harbingers of a speedy and radical cure, or symptoms of latent ailments developing themselves in secret.

The majority of our bathers experience an encrease of *appetite* already after the first baths, if no considerable reaction takes place, and all phenomena indicate a quick change of alimentary substances.

Their *sleep* grows profounder and more refreshing; it frequently overcomes them, as if by enchantment, even if it should have for months fled their eyes wearied by heavy sufferings. Many bathers also are overcome with a *propensity to sleep,* almost irresistible *after the bath;* this sleep is uncommonly refreshing and should not be resisted, as they frequently are misadvised to do, as this would tend only to make them feel uneasy all the day. I regard this sleep, on account of its uncommonly strengthening power, as highly salutary to the nervous system, and nature seems to employ it as a means to accelerate the restoration of the equilibrium of the different systems of the body, to introduce crises by the skin, and to recall more quickly the vital powers.

The sleep, however, which surprises patients, whilst taking a *warm* bath, or after they have left it, and is accompanied with headake, redness of the face, giddiness, and a quick pulse, is *to be suspected* and *to be resisted carefully.*

CHAPTER VIII.

Phenomena appearing subsequently to the use of thermal water for bathing and drinking. — Different periods of excitation, especially of that which is the consequence of bathing. Appearances in the cutaneous system. — Critical and symptomatic, or bathing-eruptions, as they are called. Phenomena attending the piles and other evacuations. — Crises. — Symptoms provoked by too long an use of the bath. — Treatment of them. — It is dangerous to leave the bathing-place before these symptoms have disappeared.

Nihil proponam, quod non factis, nihil projiciam, quod non experimentis, nihil ostendam, quod non observatis nitatur.

C. Strack in observat. med. de Febr. intermit. p. 9.

It was deemed necessary at all times that we should endeavour to obtain a correct knowledge of the phenomena produced by every medicament in the human body, in certain forms of diseases, and in the different periods of their development. This problem, already sufficiently difficult in itself, and to be solved only by means of repeated experience, offers peculiar difficul-

ties to the Balneographer, because he is occupied with a sanative power that exercises its influence upon a vast number of chronical disorders. In complicated cases it is particularly difficult, to predict the exact *time* when, or the *manner* in which it may be expected to begin the sanative operation by means of the thermal water, the organism being affected in *all parts,* and the termination of the malady, by means of critical secretory and excretory organs liable to take place in any direction. (The transformation of a disease into a *less* malady might, perhaps, also be accounted to be one of these crises.)

Most recoveries, however, take place without any previous crisis, perceived by the physician, and when they appear, the form and time of their appearance can rarely be predicted, on account of the individual constitution of the patient.

Let us now take into consideration a phenomenon we observe first after patients have for some time been drinking, or bathing in, the thermal water of Wiesbaden, and which might alarm timorous minds. The reaction taking place in the beginning of the patient's making use of the water, mentioned above, returns with *some individuals.* I have observed this being the case particularly with females of a hysteric disposition, attended with a *tendency* to hemorrhoïdal complaints, who, for that reason,

were very irritable. Bathing in, and drinking, thermal water of this place for a fortnight, three weeks, and longer, are extremely favorable, — each day is attended with additional success: one ailment after the other disappears; a pause then ensues, the irritability of the body rises — the patient's sleep grows restless; some complain of palpitating of the heart, oppression of the chest, and slight vertigo. In this case it is necessary to cease bathing, at least for some days, and to observe, what nature means by that excitation. This, however, commonly ceases in the course of a few days, when the patient may again take the bath without hesitation, and with advantage, provided he be careful to follow the direction of his physician. Others, however, in that case have attained to the limits of bathing, prescribed by nature, and if they obstinately transgress these laws, their career on the road to recovery takes a retrograde turn. I have seen such improvident bathers, who, not knowing the nature of these phenomena, continued bathing without consulting their physician, were seized with spasms, spitting of blood, and other ailments. This reaction often rises to a febrile degree *).

*) How difficult it is to predict the susceptibility of the human body for bathing, appears by instances of persons, who sometimes had an appearance of feebleness, and were afflicted with rachitis, the gout, or metastatic disorders, and,

These phenomena are sometimes also indicative of impending critical excitations, among which we also must number many febrile motions. I beg leave here to relate one of the latest cases of this kind, I have observed here:

The abdomen of a lady aged 52 years, having been afflicted for a long time with *Plethora abdominalis*, began at last to swell and to grow hard, her complexion being tinged with a greyish-yellow colour, whilst her organs of digestion were impaired at the same time. She was particularly alarmed by occasional palpitations of her heart, most commonly troubling her at night, and obliging her to quit her bed. Having bathed in, and drunk, our thermal water, the palpitations grew more violent, and rendered it necessary that a small quantity of blood should be taken from her occasionally. In the third week she had very copious and specific stools, upon which the palpitations of her heart ceased soon; her abdomen grew softer, the greyish yellow tinge of her complexion disappeared, and her digestive power was completely restored.

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nevertheless, by the time of their recovery had taken a hundred baths, and upwards, without having experienced reactions of great consequence. It should appear that, in such cases it is with baths, as it in others is with medicines, which, when nature stands much in need of them, are borne in enormous doses.

Hemorrhoïdal fluxes, when appearing for the first time, or even when restored by the bath, or the internal application of the water, after a long stoppage, frequently announce themselves in the same manner, and demand that bathing should be discontinued for some days, and that recourse should be had to various other aids of the medical art.

Eruptions, too, of different kinds, critical erysipelae (rose) of all kinds appear and disappear with febrile emotions. These maladies most frequently usher in cures of obstinate disorders of the abdomen, attended with hypochondriacal and hysterical sufferings, the majority of which are consequences of the improper treatment of an eruption, or of a rheumatic metastasis. This very summer (1822) I had an opportunity to treat an interesting case of this kind. A young woman of a ruddy complexion was subject to frequent attacks of the most violent rheumatic tooth-ake; she fell away very rapidly, and the setting in of her courses was, from that time, accompanied with the most painful attacks of spasm and colic. She drank our thermal water, and bathed. After the tenth bath, a great number of furunculae and deep abscesses made their appearance. These continued for some weeks, and then disappeared gradually, and finally delivered the patient from her menstrual colic and

rheumatic sufferings. She now recovered in a short time her blooming complexion.

Not long ago I observed in a man afflicted with hypochondriacal anxieties, after having exposed himself to a great many rheumatic influences, a large vesicular eruption break out in the epigastric region. After the lapse of four days this eruption began to desiccate, which was followed immediately by a sensible diminution of his anxious feelings.

A lady, who had for some years been suffering the most dreadful pains in her face, and had most of the teeth of the suffering side caused to be drawn, obtained great relief in the first year of her using the thermal water of Wiesbaden both externally and internally. She repaired a second time to our baths, when her whole body was covered with a pustulous eruption, which completed her recovery.

The cutaneous system being the organ by which the animal economy is brought into contact with the external world, and constrained to withstand its various influences, it is evident that, in as much as the periphery of the body is variously injured, nature is also constrained to make it the vehicle to carry off whatever is noxious to the human frame, and to restore the suspended equilibrium in the internal and external parts. This is the reason why we observe in most patients making use of mineral baths, such a general augmentation of cuta-

neous activity — in many, in particular parts of the body, transpirations of a specific smell. In some individuals, however, the suffering limb only, is preferably liable to these transpirations. An elderly person, being afflicted with rheumatic pains in the right arm, was, one night, suffused with a copious perspiration in all parts of his body. That which issued from the suffering limb stained the linnen of a green tinge, whilst the pain was abating.

A lady, whose case will be detailed in the 13th Ch. was afflicted for many years with the most painful *Tic douloureux*, which induced her to repair hither from America. While her recovery was in progress, her neck, face and the hair of her head exuded a matter of a vily quality, penetrated her cap, neck-clothes and bed-linnen to such a degree as rendered a daily change of them indispensible. This lady having god rid of her heavy sufferings, these secretions grew gradually less, and at length disappeared entirely.

Nature frequently forms by means of the mineral baths, on the surface of the body, new organs of secretion. It seems to require sometimes inflammations, pains, counter-excitements, nay, even the destruction of the soft and hard parts, for the purpose of producing pathologic secretions, and to deliver the internal parts from their sufferings. Thus I saw in persons afflicted with arthritic head-ake (with and

without mercurial discrasy) large boils appear in different parts of the head, which disfigured it exceedingly. This symptom is regularly a precoursor of speedy recovery. We also often see very painful abscesses developing themselves, from the interior part of the body, towards the surface, and suppuration continuing a long time.

A man, who was in the full vigour of life, suffered dreadfully with the gout in his head, which obstinately resisted all medicines. He bathed five weeks, and had the douche-bath applied to his head, without any apparent success. Nay, his pain had grown much more violent in the region of his right ear, which afflicted him very sensibly in the course of the ensuing winter. An inflammation formed itself very slowly at the lower part of his right temporal bone, succeeded by an abscess, which burst with considerable alleviation of pain; the sore did not, however, close, nor did the pain give way entirely. The patient, therefore, returned to Wiesbaden in the subsequent spring, and bathed. After the lapse of a few weeks the sore enlarged, and part of the surface of the temporal bone, which had become carious, could easily be removed, which was succeeded by a complete recovery of health.

The *bathing eruption,* or *bathing miliary*

fever, as they call it, must also be numbered among those disorders that frequently take place after the use of bathing. It breaks out at different periods; though it rarely makes its appearance before the second to the fourth week. Persons of a very irritable skin are most liable to it.

Experience teaches us to distinguish two different kinds of this disorder, one being *critical,* and the other depending upon external causes, and a particular disposition of the skin. Both present the same form, though the *critical* eruption shows sometimes a surface very nearly resembling the dry scab (tetters) and accompanied with an incessantly returning desquamation of the epidermis. This form is peculiar to it, if it arises subsequently to sufferings of a herpetical or scrofulous nature, or to an attack of the itch, improperly treated. It appears most frequently with rheumatic complication, and then throws itself first upon the limb affected with the latter; though it rarely confines itself to it, communicating itself also to other parts of the body, where the epidermis is very delicate, and particularly disposed to a secretion of sweat, f. i. the internal part of the thigh, the arms etc.

This eruption, having been critical in a painful sensation in one side of the body, is apt to throw itself upon the same spot of the opposite side, which was free from pain. Thus

I observed it in a young man, in 1822, who had been attacked with rheumatic pains, which were attended with a sensation of coldness, in the articulation of his left thigh. After 15 baths with *douche*, the weather being cold, a considerable bathing eruption appeared, attended with a rapid diminution of pain, but it showed itself also, though somewhat later, at the same spot of the painless right thigh. Previously to the appearance of this eruption, a prickling in the skin is frequently felt by the patient, while bathing.

Sometimes it is ushered in by sensible reactions, and then always manifests itself as the crisis of some pathologic condition. Thus I have seen it appear in both forearms, after a gouty headake, and periodically return for years, whenever traces of that disorder were perceived, which regularly gave way to this eruption, even when the patient did not bathe. In these instances it manifested itself in the form of slight tetters, and was accompanied with a violent itching of the skin.

In a case of hemiplegy, which proceeded from the abdomen, I perceived this eruption only on the paralysed right half of the body, whilst the limbs were recovering the power of motion. — With another patient, who had for some years been afflicted with a big and hard abdomen, attended with blind piles, profound melancholy, and a periodical spasmodic trem-

bling and shaking of the muscular system, this eruption broke out in autumn, when the air was cool, after having used both externally and internally the thermal water of Wiesbaden, for three successive seasons, whilst, at the same time, after he had bathed fifteen time, his hemorrhoïds began to flow. He recovered his health completely, after his body had been cleared from infarctions, though he lived a very disorderly life.

I never saw this exanthem, when disappearing spontaneously, followed by any metastatic disorder. Whenever such a disorder ensues in hot weather, after hot baths, is does, indeed, disappear frequently very quickly, when the air gets cooler; yet I never saw any injury result from it to the patient. The genuine critical bathing eruption is not checked by cool weather, but disappears only when the purpose for which nature produced it, is accomplished.

The popular opinion that bathing should be continued until the eruption disappears, cannot, consequently, have any weight, when the latter is *critical*, when nature requires the continuance of bathing for the purpose of accomplishing the crisis.

I also saw it sometimes appear some weeks after the external and internal use of the thermal water had been discontinued, and in such

instances it evidently decided *consecutive* ailments.

It is more common that we in our bath observe *symptomatic exanthemata.* They appear on the skin, as critical eruptions generally do, in the shape of numerous red points, somewhat raised, which, especially in corpulent people, sometimes grow as large as half a lentil. This eruption indicates sometimes a pathologic condition of the skin, and takes place after baths taken too frequently and too hot in the heat of summer. Its duration is uncertain, and in this regard is determined by the condition of the skin and the temperature of the baths and of the season. When the weather gets cooler, or a longer interval of bathing takes place, it commonly disappears soon. I never saw disagreeable consequences arise from the shortness of its duration; yet all that are taken with this eruption, should be careful to put on warmer apparel, when a sudden change takes place in the state of the atmosphere, f. i. after thunderstorm. I have seen the neglect of these precautions to be productive of violent erysipela, in addition to this eruption.

The majority of persons bathing here, are not liable to it, and in cool weather whole weeks often pass, without its being observed to appear. It is still more rarely seen to attack patients that have taken purges, or undergone venesection.

In winter I never observed instances of the

symptomatic bathing-eruption, though some hundreds of strange patients sojourned here in that season from 1812 to 1815. In some persons it appears and disappears, during a bathing season, sometimes repeatedly; in others it continues, while the heat of summer lasts, frequently long after they have left off the use of the thermal water.

When the heat of summer is highest, we often observe here an eruption, analogous to the former, in persons who have not bathed, which in children that are cutting teeth, frequently passes over into a milkscap.

These observations evidently prove that the opinion of Dr. *Reil,* that the bathing eruption is the surest test of baths having been taken too hot, is liable to great restriction.

Hemorrhoïds and such disorders as have an affinity to them, f. i. the *gout, herpetic eruptions, infarctions, retention of urine, palpitations of the heart* etc. present highly remarkable phenomena in their different combinations, whilst under treatment in our baths.

In persons who never had had a hemorrhoïdal flux, but betrayed only symptoms of abdominal plethory, I frequently saw the hemorrhoïds begin to flow during or after the first bathing-course, and, to the great relief of the patient, return periodically. I saw, however, also sometimes (thoug very rarely), the hemorrhoïdal

flux, that had appeared irregularly, attended with retention of urine and colics, disappear, when nature did stand in need of it no longer.

I have seen the hemorrhoïdal flux, when too copious, checked by a careful use of our thermal water, and the body gain new vigour; on the other hand, I have also seen the flux of blood encrease, when the economy of the body demanded it imperiously, and it was prevented from forming itself properly in the abdominal vessels, according to the wants of nature, being obstructed by various anomalies and attended with violent colics and pains in the loins.

The *pruritus haemorrhoïdalis,* so extremely troublesome to the sufferer, gouty pains and colics sometimes cease instantaneously, the hemorrhoïdal tetters (as they are called) peel off, when the hemorrhoïdal flux, which had been obstructed, or not shown itself as yet, appears.

In some hypochondriac persons, predisposed to hemorrhoïdal affections, by a sedentary life and an irregular regimen, the hemorrhoïds did *not* come to maturity; *their hands,* however, *were affected with humid tetters,* which delivered the patients from their sufferings for some time, perhaps, for ever, if they submitted to a proper regimen.

Paralysis, if the consequence of obstructed hemorrhoïds and of *apoplexia sanguinea,* regularly resist obstinately all sanative proceedings, until the hemorrhoïdal flux is reproduced.

In these disorders we also discover sometimes a *considerable settlement* in the *urine;* it is, however, frequently difficult to determine whether this be indicative of a crisis of the existing disease, or rather the consequence of a general erethism of the body attended with such critical excitations. I have, however, observed these settlements more frequently in hemorrhoïds not completely developed, than when they were fluent, or excited by the external and internal use of our thermal water.

In *hemorrhoïds of the bladder,* in some diseases of the *matrix,* by which the *bladder was affected;* — in the diseases of the *prostate glands* etc. this settlement, whose specific character is easely discovered, frequently is found to encrease in the urine.

The *evacuations by stools* should be particularly attended to in many diseases, as they, in the form of crises, act the most important part. All individuals affected with hemorrhoïds — no matter whether they be fluent, or not — have to apprehend, as I shall show more at large in the sequel, a long train of disorders, that will attack them more or less severely, if not supported, in their first stage (in that of the normal hemorrhoïdal flux, or in the predisposition to it), by a very regular regimen, aided by a vigorous and active organism.

The congestions of blood, cause, under these circumstances, in some abdominal organs,

irregular nutrition and secretion; in the integument of the vessels, nay even in the parenchyma of the organs substances are amassed that finally bring on the desorganisation of these parts.

These organic disproportions produce a host of sufferings, especially in the organs of digestion, in which they take root, and then are very liable to attack the organs of the chest, of the head, and even the external muscular system, and frequently become the source of a profound misanthropy, and of internal discontent. Resolvent and aperient medicines, especially, when administered in the form of mineral water, have, at all times, been found to be the best, and frequently, the only successful, remedies in such disorders, and the thermal waters, used as baths, beverage and clysters, produce highly salutary effects in cases of this kind.

The organs of the abdomen are immediately eased of their load by stools. Evacuations of a peculiar character sometimes take place in the first week of the thermal treatment; sometimes these evacuations set in later, sometimes not before the *secondary treatment,* as I have observed after the use of the water of Nenndorf. Some patients (this is, however, rarely the case) are under the necessity of repeating the external and internal use of the thermal water, before these salutary evacuations make

their appearance. They frequently last for many days; though, instead of weakening, they more and more strengthen the constitution, relieve and remove the most painful sufferings. These critical evacuations are frequently of a specific, highly penetrating smell — frequently their odour is very slight. The evacuated substance is formed variously; as for instance, threadlike or tubulous; sometimes it also has the appearance of a mambraneous jelly. Sometimes we behold in it nothing but a black, brown or green mass, which in the jaundice is of a grey or whitish hue. This mass is frequently intermixt with blood. In the period of convalescence the abdominal evacuation resumes its natural quality, as for colour, smell and mixture. On this account it is absolutely necessary, that patients should carefully notice this function. In the first Nr. of the *Jahrbücher der Heilquellen Deutschlands*, I have communicated some interesting and convincing cases of this kind, to which I could add many more that have come under my observation.

Inspecting the stools of persons subject to abdominal plethora and congestions towards the chest and head, owing to suppressed hemorrhoïdes, I found them to consist of pathologic matter, whilst their urine deposited a sediment, and a *fit of the gout* attended with febrile motions ensued. I observed, however also, that in this abdominal plethora the gout

appeared singly and for the first time. Vertigo, tinkling in the ears, difficulty of respiration, pricking in the liver, and various disorders of the stomach, were as completely removed, as in other patients by the manifestation of the hemorrhoïdal flux or a fit of the gout. These critical fits of the gout are uncommonly slight. While they last bathing should be discontinued and the thermal water drunk in larger quantity.

The glandular system of the throat and of the windpipe, and the membranes of the lungs frequently share the salutary effects produced by the critical evacuations brought on by the external and internal use of the thermal water, discharging by expectoration matter of a specific nature. Out of many instances I had occasion to observe, I shall here mention only the following case. A man of the age of 44 years, and evidently of a phthisical habit, having been afflicted with fluid hemorrhoïds from his 25th year, was frequently subject to hoarseness and an expectoration of phlegm. When a child, he was scrofulous. When he came to Wiesbaden his maxillar glands and those of his ears had been swollen very much and hardened for eighteen months, and his continual hawking, attended with cough and hoarseness, justified the supposition, that his pulmonary glands, too, must be affected, and in a state of diseased secretion. His abdomen was very tense, though his digestion was good. This

state, attended with continual sweat and emaciation created well-founded apprehensions.

The daily external and internal use of the thermal water at first improved his appetite and strength — but then his maxillary and parotid glands began to be very painful, and a copious vitreous expectoration of a salt flavour made its appearance. It was necessary that recourse should be had to a softening syrop, as the continual hawking had rendered his windpipe and throat sore.

This morbid sensibility of his glands disappeared in a few weeks; and they were gradually reduced to their natural size. The expectoration, as well as the tension of his abdomen decreased at the same time, while the hemorrhoïds began to flow more copiously. In the sixth week bitter medicines could be safely administered, and the patient, whose state was so alarming on his arrival in the bath, was completely restored to health, when he left it.

This critical expectoration does not, however, form itself in all tumours of the glands of the throat and chest; the glands of many patients diminish and disappear without expectoration; whilst the glandulous tumours of others do not decrease at all, if the hardness be the consequence of antecedent inflammation of long standing *), or has existed from early youth as a

*) I know, however, some successful cases, in which, nevertheless, a complete cure was effected.

rooted disease of the lymphatic system. In this case thermal waters are generally as inefficacious as all other remedies.

A *specific expectoration* also takes place sometimes, when stagnating hemorrhoïds attended with asthma, are provoked by the thermal water, and made to flow again, I have seen the critical flux appear simultaneously with the expectoration; the latter frequently takes place, unattended by the former. The greenish salt expectoration is, as I also have observed in other cases of asthma, the crisis of disorders of the chest.

The *mucose membranes* of other parts of the body, too, frequently become the seat of critical secretions. The disorders which are decided by *them,* are of a metastatic or rheumatic origin. Even such parts of the mucose membranes as are not very liable to become critical organs, are rendered conductors of severe chronic disorders. I have quoted in several places of this work cases of this kind; and shall here mention the following only.

A lady, 36 years of age, having been troubled for a long time with a violent pain in her left cheek-bone, came to Wiesbaden for relief. The pain did not abate, and at the end of the third week she left us, as it appeared, without any prospect of getting rid of her disorder. Only a slight burning sensation in the upper maxillar sinus had taken place. Some weeks after her

return, a copious secretion of yellowish mucus formed itself in that sinus, which discharged itself through the nose, when she lay on that side. This discharge lasted about four months, the pain ceased, and did not return, though with less violence, till after the lapse of some time, when the discharge from the nose discontinued; I could not learn how she was treated during that crisis. It is highly probable that a second use of the water of Wiesbaden would have cured her completely.

The thermal water of Wiesbaden also *cures* idiopathic blennorrheas. To mention only one case of this kind, out of many that came under my observation: a person who, in every other respect, enjoyed a good health, was, in consequence of a cold, affected with an offensive discharge of matter from the upper maxillary sinus, which disappeared intirely, after a short use of our thermal water. This category also includes the leucorrhea (white flux) of the female sex, of which I shall treat in an other chapter.

Critical nasal hemorrhages, too, have come under my observation. I have communicated in the first number of the *Jahrbücher der Heilquellen Deutschlands,* the case of a person who was affected with a weakness of sight bordering on blindness, attended with violent headake and melancholy, who was delivered from his malady by means of a nasal hemorrhage, which lasted six weeks.

The phenomena that are observed immediately *after* the use of the thermal water of Wiesbaden, are discussed at large in the 24th chapter, where they, at the same time, are connected with directions respecting the regimen to be observed by patients, or convalescents and the proper treatment of them by their physicians. May it suffice here to observe, that frequently new secretions take place, or appear for the first time, and that others which were developed during the use of the thermal water, continue for some time, *after* the return from the bath.

As there is a *point of saturation* for all medicines with regard to their proportion to the living organism, beyond which they may not be administered, without injury to the patient, so there is likewise such a point in the use of thermal waters, which it is highly dangerous to overstep.

It is, however, difficult to determine beforehand the exact degree of susceptibility of each individual for bathing. I have seen patients of a very weakly appearance and affected with very severe disorders, take an incredible number of mineral baths, while their robust neighbour was already exhausted with a fourth part of that number, and saw himself constrained to leave off bathing. A phlogistic habit of body, a greater or less excitability of the general reproductory impulse, the nature of the

disease, and, finally the manner of bathing and of drinking the mineral water, determine this point of saturation. I shall not enlarge here upon the two first of these points, as an inquiry into them would carry me too far into physiological and pathological discussions, which would be overstepping the bounds of this work. The nature of the disease, and the particular direction of treatment are, however, most intimately connected, and may not, therefore, be passed over here in silence. It depends in most instances upon the skill of the physician directing the cure, as well as on his care and gift of observation, what turn the state of the patient is to take. Patients of a very irritable disposition should drink the mineral water for some time (if the nature of their malady permit it), before they begin bathing. The temperature of the bath must be made to correspond as exactly as possible with their individuality. Baths that are but *one* degree too warm or too cool, will very soon produce the point of saturation. Neither is it adviseable that such a person should bathe daily, nor, in the beginning, stay in the bath longer than 15—25 minutes; for his great irritability very easily provokes in the very beginning those excitations that are the forerunners of critical secretions and accelerate the appearance of the symptoms of overbathing, and if the patient be not exposed to the danger of a violent artificial fever, the success of his cure is, at least, rendered

very doubtful. He is, in this case, obliged to discontinue bathing so long that the time intended to have been spent in bathing passes, or must be prolonged considerably.

I shall enlarge upon this important subject in an other place, and now pass over to those phenomena that characterize the point of saturation produced by bathing.

Many patients are, in this case, affected with an uncommonly restless sleep, disturbed by dreams, though they have not to reproach themselves with any neglect of the regimen prescribed to them; sleeplessnes gradually accedes, or a drowsiness, in the day-time, continually inviting to sleep, but not affording the least refreshment; the eyes are painfully affected by the light, or are liable to smart when the patient is reading.

In other patients the point of saturation announces itself more by an affection of the abdominal nervous plexus than of the brains. The sufferers are, without any apparent cause, affected with uneasiness, sadness, dejection, with an anxiety for which the bather himself cannot account, a splenetic humour etc. We may not, however, immediately take these phenomena to be decided symptoms of the point of saturation, and stop the treatment of the person thus affected; for these complaints frequently are the fore-runners of desirable critical evacuations. Some tetter may be on the point of

re-appearing, the stagnating monthly course, or the interrupted hypochondriacal flux may be preparing to be active again etc.; and no sooner do these evacuations take place, than the whole scene is changed. Even the symptoms of deficient digestion, want of appetite, a covered tongue (dispepsy), which generally attend the point of saturation, are not always guides we may implicitly rely on. It will, however, always be necessary, in such a case, to discontinue bathing for some days, and then to abridge its duration. Whilst in the bath, the patient then feels himself frequently most relieved, wishes to stay in it longer, and is apt to disregard the advice of his physician, to shorten the time of bathing, or to discontinue bathing altogether; however, palpitation of the heart, difficulty of breathing, copious sweats, a covered tongue and more conspicuous hypochondric disposition justify the correctness of the physician's prediction, which at length is fully confirmed by irregular febrile motions, a change of urine, and a sense of real sickness.

This fever sometimes rises to an alarming hight, and appears not to admit of the assistance of purges and emetics, to the administration of which we might easily be misled by the occasional appearance of gastric symptoms. If they are given in such a case, or if these fevers are treated too impetuously, they are very apt to form themselves into ner-

vous fevers. More injurious still is venesection, and *Broussais* would here, as *Diel* in his instructive work: *Monographie über Ems* justly observes, do no honor to his theory.

I have very rarely observed these fevers, and only with patients who bathed unassisted by the advice of a physician; but I found that *Diel* is perfectly correct, when he observes, that only gently exciting remedies, promoting perspiration, should be administered, as they will bring about salutary crises by means of perspiration and the urinary vessels. When the excitation was slight, the patient generally was relieved by rest, or gentle exercise in the open air, small doses of mineral water charged with carbonic acid — with the addition of lemon — juice and sugar.

The symptoms arising from overbathing, if not attended with fever, disappear regularly very soon. The following is one of the latest cases of this kind, I had an opportunity to observe: A young man, suffering severe rheumatic pains in his leg, bathed here, unassisted by the advice of a physician, and after about thirty baths, was intirely free from pain. Nevertheless, he continued bathing for an hour daily. His pain now returned gradually, and, having taken about forty baths, he was seized with a general weariness, a sense of lassitude in all his limbs, thirst (though without fever), want of appetite, and even his nervous system was violently af-

fected, whilst he was at the same time, attacked by vertigo and pain in his eyes, and his faculty of thinking was sensibly weakened.

I advised him to discontinue bathing, to drink the mineral water of Fachingen, by which means the pain ceased immediately, and the young man was completely cured in three days.

It is dangerous to quit the watering place before the symptoms of overbathing have disappeared entirely, or to take fatiguing exercise, as patients thereby expose themselves to dangerous fevers.

CHAPTER IX.

Immediate effects of the thermal water of Wiesbaden, when drunk.

THE thermal water of Wiesbaden is one of the most digestible mineral waters. Even small doses of water impregnated with ferruginous carbonic acid frequently incommode the stomach sooner than our mineral water. This quality seems to depend chiefly upon the *specific* warmth of the thermal water, which, considering the great quantity of fixed particles, really is an extraordinary phenomenon. Besides, most patients befriend themselves with the water in a few days and deem it a disagreeable privation, when they must discontinue drinking it.

When drunk regularly, this water strongly provokes appetite, and favors digestion, a property known to be peculiar to kitchen-salt (muriate of soda), which forms a constituent part of it. *Mungo Park* informs us, in the description of his travels in the interior of Africa, that whenever he had wanted salt, he had been very ill and not digested well. This

want of salt, he adds, had been more intolerable to him, than all the torments caused by thirst, and his longing for salt had been much stronger than his desire for water.

It might be supposed, that the water of Wiesbaden, on account of the large proportion of muriate of soda it contains, must be liable to provoke violent thirst; I have not, however, heard people drinking our mineral water complain more of thirst than others, that only bathed in it.

This water is highly diuretic, especially when it does not produce copious stools. I made a phthisical patient, who expectorated an incredible quantity of pus, and spent many sleepless hours of the night with coughing, drink our thermal water in small doses all the winter. His cough and expectorations were uncommonly reduced, the latter not exceeding one tenth of what he had discharged in the beginning; but, at the same time a copious purulent sediment was observed in his urine, whenever he made water *). An impostume bursting, in spring, and the patient dying soon after of hemophysy, his lungs were found to be in a dreadful state of desorganisation.

The water of Wiesbaden, if taken in small quantities, is resolvent and aperient, does not,

*) Mr. *Richter* praises the water of Selters for the same quality.

however, weaken the appetite, or interrupt digestion, as apperient medicines, properly so called, commonly do.

Some patients experience already its purgative effect, after having drunk from half a pint to a whole one; it is for this reason, that I, f. i., prescribe it in small doses to pregnant women, with great success, against the costiveness so common to them *).

Persons suffering on account of checked or irregular perspiration, are frequently affected with diarrhea, by drinking our thermal water; but, if they continue the external and internal use of it, this disorder disappears, when perspiration is restored, or the urine deposes a sediment.

The chronical state of irritation of the internal membrane of the intestinal duct, approximating to inflammation, which originally arises from a derangement of the functions of the skin, and against morning **) causes some liquid stools, does not agree with the thermal water in the

*) I allow mothers who are nursing infants cutting teeth, and are effected with costiveness, to drink the water of Selters or Wiesbaden, in obstinate cases, and I always have the satisfaction of removing that constipation.

**) In that period nature has a tendency to augment the activity of the skin, but deposes the matter in the intestinal duct, instead of throwing it on the surface.

beginning of the cure. The mineral water, even if taken in small quantities, encreases the diarrhea. But when transpiration is restored by bathing to its proper course; when the intestinal duct, and the external cutaneous system, are more equilibrated; then the patient is able to drink copious quantities of mineral water, and it becomes an excellent means of regulating the abdominal secretions. The warmer it is drunk, the less it acts upon the stools.

Some drinkers of our thermal water experience, in the beginning, a slight constipation. Bathing, which frequently promotes transpiration, is the principal cause of this phenomenon. Such as experience an encrease of stools, when drinking only small quantities, generally are persons of a delicate constitution, resembling that of children, or individuals whose urinary system and intestinal duct are weakened. The water being resorbed but slowly in their body, it must encrease the number of their stools. But I must caution my readers, not to mistake all liquid stools for diarrheas. With many persons the water settles in the intestinal duct, while bathing, but is soon carried off by watery stools, which have the appearance of diarrhea. I have frequently observed this with people who did not drink the thermal water, but only bathed.

The water, when drunk in small quantities, before breakfast, is more apt to cause diarrhea,

than when it is taken after breakfast. If patients drink it, and do not bathe, it promotes the stools much more readily, than when used both externally and internally.

When the activity of the skin and the kidnies is considerably raised, copious quantities of our water may be drunk before a frequency of stools ensues.

If the thermal water, when drunk in quantities of three or four pounds a day, causes diarrhea, this effect will cease after the lapse of some time, and the patient may continue a long while drinking the same quantity, without experiencing a return of that inconveniency.

CHAPTER X.

More distant effects of the external, but particularly, of the internal, use of the thermal water of Wiesbaden, represented in a connected series of diseases.

It is a series of diseases, connected by a great physiological and pathological tie, in which the sanative power of the springs of Wiesbaden has invariably prevailed. To these diseases belong, above all, the chronical disorders of the abdomen, together with their formidable progeny in other systems of the body, which frequently are not to be cured by the usual remedies.

Suffice it to draw here only the general ground-lines of this pathological metamorphosis, as I purpose to demonstrate as satisfactorily as possible the sanative power of our mineral water, especially with regard to its internal use. Thus the *extent* and *limits* of the *efficacy* of our mineral water will be made

more accurately evident, than has been done, as I presume, in any other work of this kind.

When endeavouring to demonstrate the efficacy of the water of Wiesbaden by referring to a series of diseases developing themselves in a primitive pathological form, I do not, however, deny that, as experience proves, many of the diseases in question might also have formed themselves in a different way, f. i. as the consequence of catarrhal or rheumatic affections. No practical physician will deny that cutaneous eruptions are as likely to be occasioned by rheumatic humors, infection, by some particular secretion etc., as by the causes of evolution mentioned by me; yet the *cure* of diseases formed by the *latter causes* is most frequently effected by means of the baths of Wiesbaden, which for ages have proved themselves highly efficacious in cases of this kind.

If, with a hemorrhoïdal disposition, and a sedentary life, the body be nourished too abundantly, or affected by mental sufferings, many, nay frequently even very strong constitutions, are liable to disproportions in the primary movers of nutrition, i. e. the nervous, sanguiferous and lymphatic systems of the abdomen are disturbed in their harmonious cooperation, and the function, which they are to perform jointly, becomes defective and disordered. This irregular activity in organs of such importance

frequently produces, under the above mentioned influences, in the first instance, plethory of the abdominal vessels, obstructions of the abdominal circulation, torpor of the functions of digestion, and, finally, degeneration of the secretions peculiar to the intestinal organs, acidity, heaviness and oppression during the digestion of food, spasms in the stomach, congestions of the blood towards the head etc. The usual gaiety of the patient is frequently superseded by hours of gloomy melancholy.

Patients of this description are assailed by a greater or smaller number of this group of disorders.

It is in these germs of diseases that the water of Wiesbaden, especially when drunk, affords speedy and certain relief; if, however, the patient neglect procuring this aid in proper time, and defer it to some distant period, his disorder will infallibly encrease: palpable swellings take place, especially in the sanguineous organs of the cavity of the abdomen, f. i. the liver, the spleen; settlements are deposited in the mesentery, the epiploon; the abdomen grows unproportionably big and hard; the face is sometimes suffused with a deep red, blooming complexion, whilst the extremities are visibly wasting.

Many individuals are affected with periodical catarrhs, which resist all common remedies; some patients are seized with frequent

vomiting, with spitting and vomiting of blood (if the upper part of the system of the port-vein is particularly affected), or with the most violent periodical colics, threatening to bring on dangerous inflammations; farther, heaviness of the head, headake, vertigo etc.

It cannot be denied, that temper and manner of life modify this train of disorders, and communicate to it their character. Thus this morbid development generally confines itself with persons of a sanguine temper chiefly to the sphere of the vessels themselves: hemorrhoïds are formed, which, fortunately for the patient, frequently cause evacuations of blood; but as the primitive cause is not removed, they return periodically. In this state of impaired health many remain all their life, though they may live to a high old age, if the hemorrhoïdal flux assumes a regular form, does not stop, nor becomes too violent.

Many individuals are seized with a serous sanguinolent diarrhea, known by the denomination of *lientery,* which considerably reduces the above mentioned morbid symptoms, and may be regarded as replacing the hemorrhoïdal flux.

In phlegmatic and serous constitutions the hemorrhoïdal flux is very apt to alternate with gouty fits, which occasion arthritic swellings and pathological secretions in the joints. The hemorrhoïds are now calmed, but re-appear

when the gouty fit is past. The same scene is repeated within the course of some years, or sooner, if the disease, and, along with it, a train of secondary disorders, be not unrooted by means of the external and internal use of some adequate mineral spring.

These secondary disorders consist chiefly in stiffness of joints, in pains that are almost permanent in paralysis, attended with atrophy, in fits of apoplexy, arising from the same source, in hydropsy of the articulations, hemorrhoïds and spasms of the bladder, in sympathetic disorders of the heart *), asthma, herpetic and other eruptions, ulcers of the feet etc.

These are the different maladies, that commonly are cured by the external and internal use of the thermal water of Wiesbaden; if, however, the disease should have gained too much ground, or if the patient should be prevented from availing himself long enough of the sanative influence of our springs, the aid of pharmaceutical remedies will be requisite, and, though rarely, a repetition of the external and internal application of our thermal water in the subsequent season.

I repeat here the observation made obove, that the whole of this train of disorders also

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*) I have seen them rise from periodical palpitations to fits of syncope, and yet cured by means of our thermal water.

may arise from different causes, and, partly, from external ones, in which case the mineral water of Wiesbaden may confidently be expected to afford relief, which, however, will more readily result from the external than from the internal use of it. Yet it should be observed, that some of these disorders may be so deeply rooted in some subjects, as not to admit of their removal. How, f. i., is it to be expected, that our thermal water would cure deafness arising from varicosities, or other incurable desorganisations?

The same diseases, in their development, exceed sometimes the limits of the sanative power of our springs, as well as that of all other medical means. The focus of circulation — the heart and the lungs — are sometimes so severely affected by that morbid development, whose seat is in the organs of the abdomen, that extravasations of serous humours, enlargements, condensations of the vessels, nay arthritic settlements — ossifications of these organs, sometimes even pulmonary phtisie, are the consequence.

Apoplectic fits, accompanied with extravasations in the head, paralisis of the limbs or of some organ of sensation, are also frequently seen to ensue *).

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*) It is needless to observe, I presume, that these paralises are only such as are accompanied with extravasations in the brains, or the spine;

Equally *incurable* and defying all the aids of nature and art, as the above disorders, is the state of the patient, when the progress of the same original malady affects some important organs of the abdomen, that are indispensibly requisite, for supporting the economy of life, and suspends their functions, instead of confining itself to the organs of circulation, or to destructive settlements on the surface. To this class belong glandular obstructions, attended with desorganisation, a hardened liver and spleen, gallstones, jaundice, spasms of the stomach, arising from *such* a cause, excrescences in the cavity of the abdomen etc.

Though we may say, in general, that these maladies obstinately resist all efforts of nature and art, yet we see instances of persons, who, favoured by age, by their former way of life, temper, and constitutional vigour, here burst fetters, in which death seemed to have chained them indissolubly *).

The majority of such patients are, however, incurable, though many of this class of sufferers received the relief they still were ca-

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for paralises that are purely nervous or arthritic, without throwing lymph upon the nobler organs, are cured here every season.

*) In the *Jahrbücher der Heilquellen Deutschlands* Nr. 1, p. 107 and 127 I have communicated some cases of this kind.

pable of, only from the thermal water of Wiesbaden, — nay, even in very palpable *schirrosities of the liver* (I say *schirrosities;* for simple obstructions of this organ I have often seen disappear here), whose incurability had not yet extended itself over the whole organ, I have seen the jaundice, together with its retinue, indigestion, spasms of the stomach, the immediate consequence of it etc. give way, and the disease of the liver, which was apprehended to rise to a degree incompatible with life, arrested in its progress.

CHAPTER XI.

Observations on the nature and treatment of infarctions, or the morbid reproductive procedures of the abdomen. They have a common origin, and in their rise pass through diverse periods. Description of these stages, and efficacy of the mineral water of Wiesbaden in each of them. Hemorrhoïds — Spleen. Efficacy of this water in the consequence of the endemic fevers and hepatic diseases of the East- and Westindies. Wiesbaden the refuge of persons that have resided in the Eastindies. Some cases of diseases. How the water of Wiesbaden may be drunk by persons living at a distance from it.

In the preceding chapter we have described, as the triumph of the thermal water of Wiesbaden, a group of morbid phenomena, linked together by organic laws of evolution, and in most instances found to be the progenies of abdominal plethora. Although the successive development of those diseases may not be questioned by the majority of such physicians as have had occasion to observe them, yet their physiological signification and their pathological connexion are still enveloped in obscurity, which

is particularly the case with regard to the doctrine of infarctions, or morbid accumulations in the intestines of the abdomen. The insufficiency of the arguments which have been adduced for the purpose of applying established pathological principles to these phenomena, together with the important diagnostic mistakes, into which the principal advocate for this doctrine (Dr. Kämpf of Hanau) evidently has fallen of late, and a too empirical treatment, have brought it into such disrepute as even to be passed over in silence in the public lectures in some of our universities. Nay, many medical men preferred to feign ignorance of this phenomenon, or to deny the reality of it, to giving their assent to a doctrine which, though unsupported by physiological solidity, had introduced itself into practice; yet, how few solid objections have been raised against it! Thus the belief of a great majority of observers in the existence of morbid productions, which we call infarctions, remains unshaken, and physicians were constrained to acknowledge, that many patients leading a sedentary life, either cannot be cured at all, or be delivered from their disorder by a method purely empirical, if we do not admit of the real existence of those maladies, and regulate our curative plan accordingly.

It being required that this subject should be taken notice of in this work, I shall attempt

briefly to lay down the most general groundlines of the important doctrine of infarctions and their treatment, according to the notions of modern practitioners.

The reproduction of the human body is to be viewed as an operation which, by the continual solution of substances acquired, and the incessant regeneration of substances lost, secures the existence of animal economy. The preparatives for this grand operation take place in the organs of digestion properly so called, and are continued through all organs by an uninterrupted metamorphosis. We, then, recognise in this primitive function a reproductive, or plastic, power, developing itself in the entire organism, and thus contributing to the nutrition and preservation of the body. When this plastic power rises beyond its normal state, we see a train of pathological phenomena making their appearance, whose climax represents inflammation, and, consequently, is founded upon an excessive activity of the organism *). Thus

*) We must, indeed, in this case presuppose, that the relations between the sanguiferous- lymphatic- and capillary vessels, together with the nerves are disordered. As I am not, however, writing a pathogony of inflammation, I shall not here enlarge upon this subject, only referring the reader to *Kreysig's* acute disquisition of the essential conformity of reproduction and inflammation. Vid. his *Krankheiten des Herzens.* Th. 1.

we behold here the formation of a family of disorders, intermediate between normal reproduction and inflammation. Of these, in as much as they affect the organs of nutrition, or digestion, properly so called, I shall here mention the following: extraordinary secretions of mucus, worm-diseases, scrofulous disorders, hemorrhoids, obstructions, hypertrophy of some organs, polypus's, and other morbid productions. It is according to the same laws of nutrition, though modified by disease, that those morbid productions are formed, which we call infarctions. They are the product of an excessive plastic power, by means of which they, as an accumulation of matter, assimilating more or less the organic texture, are deposited in the vessels of the abdomen, the mesentry, epiploon, liver, spleen, matrix etc. Not being essentially connected with the organs in which they are formed, they commonly are very separable from the proper texture of those parts.

It is evident that these morbid formations, especially, when they take place in the principal organs of nutrition and sanguification, must produce great disorder in the economy of the body, and be capable of rendering the happiest life a heavy burden.

The ancient physicians were already acquainted with these diseases, though they entertained very imperfect notions of their origin. They attributed the obstructions of the vessels

(obstructiones) to a condensation of humours, and atrabilariousness, arising from it, and called this state: *material hypochondria [hypochondria cum materia *)]*, as the mind is affected by it along with the body. Later physicians, f. i. Tissot, Zimmermann, Markard and others penetrated more profoundly into the nature of these diseases and the organic operations that give birth to them, as well as into their affinity to other disorders. What the ancients fancied to be atribilariousness and its consequences, was now found to be abdominal plethora, and disorders occasioned by it, stoppages in the system of the portvein, and other organs connected with it, corruption of the secretions of the abdomen, frequently accompanied with gouty anomalies and mental sufferings.

The treatment of these disorders, observed by the ancient physicians, was, upon the whole, much the same with that which prevails in our times, and will, doubtless, continue to be regarded by all good observers as the best, though a more profound study of nature should lead

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*) *Herm. Bœrhaave* Aphorismi de cognoscendis et curandis morbis. Aphor. 1092. et 1098.

Van Swieten Commentar. in *Herm. Bœrhaave* Aphor. T. III. p. 464—481. et seq. — But more particularly Tom. I p. 853., where he says: tenax enim et piceus humor, atrabiliarius dictus, viscerum abdominalium vasa plerumque replet et obstruit, et chronicos maxime morbos facit.

to a better knowledge of the original causes and of the development of these diseases, so dangerous to human life, and undermining its very foundation. Most medical practitioners agree, that cathartics only are not curative in these diseases, but that resolvents should be administered, and purgatives only occasionally combined with them.

The obscure notions that were entertained respecting the pathogony of these diseases, naturally occasioned a fatal disregard of important considerations that must be kept in view in the treatment of them; *for they run through certain periods, in which their dynamic character is altered*, whilst they also greatly differ, according to the organ that is chiefly affected. These very important points, but rarely regarded in practice, must regulate the treatment of the patient, and modify the use of the thermal water of Wiesbaden. If the disease be purely hemorrhoïdal, and develop itself in a robust body, it will show itself in the shape of phlagosis and an affection of the irritable organs. A periodical bloody flux *),

*) The bloody flux, if moderate, and not attended with painful symptoms, is not changed by the use of our bath, especially when it is necessary for the existence of the economy of the body. But when it makes its appearance in a manner threatening the patient's life (f. i. when the blood flows too copiously, colics or other dangerous symp-

painful *conamina haemorrhoïdalia,* colics, pain in the back, and other morbid affections, frequently rising to evident inflammation, may be the consequence.

Another period of the disease commences, when the latter has already proceeded so far as to engender morbid products in the organs of the abdomen. In this stage of the disease, an abnormous plastic power frequently acts upon the mucose membrane of the intestinal duct, turns into an irregular secretion of mucus *(haemorrhoïdae mucosae)* — rarely into a production of worms, but frequently into a generation of pseudomembranes and polypus's, which is evidently proved both by the section of cadavers, and the copious discharge of masses of mucose matter and membraneous and filamentous substances, frequently expelled immediately after resolvents have been administered. Cases of this kind *), I have often treated with sul-

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toms accede), the water of Wiesbaden, taken properly, and, above all, not too hot, removes these symptoms. The overcopious bloody flux is reduced, that which was too languid, is augmented, or disappears entirely, and that which had ceased to flow and thereby endangered life, reappears, if the economy of the patient's body requires it. The cause of these phenomena is pointed out in the sixth chapter

*) Formations of polypus (it is well known) cannot be removed by pharmaceutical remedies.

phur, salts and other resolvents, according to the dynamic character of the disease, and the degree of its development. A considerable quantity of medicaments was, however required, to obtain results affording some degree of satisfaction; the abdominal plethora, the original cause of the disease was not subdued entirely, although the erethism of the vessels had been calmed, and the pathological products removed. Hence, the same disease returned soon, frequently in a different, sometimes worse, shape.

In disorders of this nature the water of Wiesbaden answers much better all indications; it removes them in a short time, and, in most instances, without the aid of other medicines. The water, if drunk copiously, excites the secretions, and thereby contributes to render the humours in the organs of the abdomen more fluid, and thus relaxes and resolves both by privations and evacuations, as well as by means of its saline nature. The internal use of our water, consequently, attacks the morbid state directly, whilst its action is powerfully supported by bathing, as it revives the autocracy of the entire organism; it promotes the distribution of the blood in the exterior organs, and prevents it from accumulating in the abdomen.

In the third stage of these disorders, the morbid reproduction verges more towards the principal organs of nutrition, and has formed

already obstructions, congestions and tumours in the lymphatic glands, in the different parts of the portvein, in the liver, the spleen etc. In this period the active plastic power commonly is extinct, the dynamic character is totally or partially changed; a languid atonic life is now perceived in that part, in which, previous to that pathologic metamorphosis, the encreased activity of a pseudo reproduction threatened to prove fatal to the indispensable organs of life. The penetrating experienced, eye of the physician must here distinguish, which organs are affected, to what degree of vitality the disorder has risen, whether it have assumed an atonic character, or whether that pseudoplastic impulse be not exhausted yet, and, consequently, the present operation of nature be not still a state of raised irregular activity?

As the third stage of this morbid state, which I have delineated here cursorily, generally requires very vigorous medical aid, it is also matter of the highest importance, that a proper choice should be made of the remedies employed, if the patient is not to experience more injury than benefit. If, f. i. after the formation of infarctions, the phlogistic, or active irregular disposition should continue, saline compounds, such as *kali tartaricum* (tartarate of potass), *kali aceticum* (acetate of potass), *liquor digestivus* etc. may be administered with benefit, though this must be done with great circum-

spection, because a real state of debility soon succeeds, and these remedies must, in most cases, be combined with aperient bitter medicaments, provoking the operation of digestion and resisting debility. *Assafoetida,* the water of *lauro-cerasus* and prussic acid, recommanded by the celebrated doctor Kopp, might, doubtless, be of use in some particular cases.

But when the active hemorrhoïdal impulse ceases entirely, and the existence of real infarctions is evident, all saline medicines are very injurious, as they deprive the organs of nutrition of the little energy with which the important operation of digestion is still carried on slowly. Such a case requires that we should administer medicines that stimulate the entire operation of digestion, revive the tone and vitality of this languid function, and restore the stagnant and alienated secretions — remedies that, consequently, are capable of provoking the act of volatilisation in all organs of digestion and assimilation, and thus serve to remove obstructions and infarctions. They must be both reviving and resolving, and the choice and combination of these medicines must be subordinated to the susceptibility of the organs of digestion.

Experience has made us acquainted with a series of very powerful remedies, such as cichory, *taraxacum, marubium, chelidonium,* with some metallic preparations, f. i. of mer-

cury and medicated soaps etc. and with rhubarb, the most important of all. These medicines are commonly made up with oxgall, as a very proper ingredient.

Yet, how often have I seen these disorders obstinately resist the endeavours of the most skillfull physicians, when they, at last, were completely cured by means of an apparatus much more simple, aided by the powerful influence of our thermal water.

The waters of Wiesbaden agree extremely well with this stage of the disease, and, consequently, with the entire third period of it, and as they do not excite the secretions of the mucose membrane of the intestinal duct, as strong purgative salts use to do, they enter the lymphatic vessels and the principal organs of digestion, preparing the way for the secretions. Resolvent bitter medicines, *which sometimes must be administered as auxiliary means*, act more promptely and in smaller doses.

If the query: Why the water of Wiesbaden, when drunk in disorders of this kind, agrees so well with the patient, whilst other saline compounds would prove injurious? is to be solved on chymical principles, we might reply, that the mixture of the component particles of natural mineral waters, is more intimate, finer, a. s. f. and that we also must take into the account the remarkable admixture of

iron, the quantity of carbonic acid which they contain, and the natural heat.

Considering the powerful efficacy of thermal water, we are not to overlook the influence of bathing, which, together with the manner in which it acts, has been discussed already in several passages of this work.

Patients, whose case evidently is too obstinate, and the time of whose residence in our place is too short, to justify the hope of a radical cure, I direct, according to *Lentin's* method *), to drink the water for three or four weeks at home, and then to continue it at the spring itself. Very often I order clysters of this water to be applied, which most frequently are resorbed, and have an excellent effect. If circumstances require it, I direct douche-baths to be applied to the abdomen.

In obstinate cases, the season permitting it, I prescribe the use of the juice of resolvent herbs, in addition to the bath, and in autumn that of grapes, if the condition of the stomach allows it, a treatment preferred to all others by *van Swieten* and *Burserius* in the diseases of the abdomen.

The treatment with resolvents being finished, and the conviction obtained, that it has produced the desired effect, the convalescent,

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*) *Beiträge zur ausübenden Arzneiwissenschaft von Dr. L. F. B. Lentin*, Vol. II. and III.

if his case should require it, may make use of the excellent water of Schwalbach, which he may drink either at the spring itself, or here, as it may be had fresh from the wells every day, in which case the use of our thermal baths is continued. Repairing to Schwalbach is, however, frequently preferable. In some of these disorders, which render the bowels very irritable, chalybeate waters very often can be borne only, when natural thermal baths are used *along with them.*

Passing over the opinion of *Frederic Hoffmann* of the efficacy of our thermal water, given already a century ago, I beg leave to quote here briefly what *Lentin* says of its sanative power in abdominal plethora, in hemorrhoïdal affections and infarctions, and of the mode of using it at a distance from the spring.

He says: „The thermal water of Wiesbaden is to be recommanded particularly to persons that perceive the symptoms of incipient hemorrhoïds, in order to avert a future state of this troublesome servitude, which will not fail overtaking them, if this water be not drunk for three or four weeks both in spring and autumn, and in the intermediate time one or two bottles *) of it be taken occasionally in a

*) So large a quantity is rarely required. P.

day, especially when complaints are felt that indicate a disposition to hemorrhoïds."

„It is, in this case, less important to pay attention to the shape in which the hemorrhoïds manifest themselves, than to the manner of drinking this water, unless nature, which previously was used to ease herself by way of the hemorrhoïdal veins, should be prevented from it, which causes a congestion of blood towards the chest or the head, which produces oppressions of the chest, hemoptysy, nasal hemorrhages, vertigo and apoplexy. In *such* circumstances a treatment by means of the thermal waters of Wiesbaden would last much too long *), althoug they prove highly efficacious in periods, when this is not the case, and may

*) It should be observed, that *Lentin* is speaking here of the internal use of the water of Wiesbaden, only as being drunk at a distance from the spring, or when it is applied as a clyster. The water is, however, considerably less efficacious, when drunk at a distance from the spring, than when taken at the wells, issuing directly from the bosom of the earth, penetrated with its natural heat, and saturated with gas. In the first number of the *Jahrbücher der Heilquellen Deutschlands* I have quoted several cases of persons exhibiting symptoms of very serious attacks, threatening the most imminent danger, who were cured by the sole use of our thermal water, both as baths and beverage and, at the same time, in clysters. Such cases demand, however, that the physician should use the most careful circumspection.

confidently be expected to remove, or to reduce the cause of the disease; for we may generally suppose, that hemorrhoïdal sufferings are accompanied by mucose accumulations, infarctions and obstructions in the abdominal vessels. In diseases of this nature, there is no better remedy than the water of Wiesbaden, taken in the following manner."

„The patient drinks in the morning, in bed, two or three glasses, well warmed *), in which one or two teaspoons full of salt of *Glauber*, or *Carlsbad* **) have been dissolved, and when he has risen, he drinks a couple of glasses more without the addition of salt."

„About ten o' clock I order a clyster of the same water, moderately warm, to be applied, making the patient assume the posture prescribed by *Kämpf* ***), which is the more indispensable, if the patient complain of a sensation, more or less oppressive, in the left side beneath the short ribs, and feel palpitations of the heart. Both complaints commonly are coexistent, and keep up the anxiety of the patient, especially when he is gone to rest. Such persons fre-

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*) The water is put, in a jar, into heated water.

**) Or salt of *Epsom*. Tr.

***) The patient lies down for a quarter of an hour, first, on his left, and then on his right side, his buttocks being raised and his head lowered.

quently cannot bear lying upon their left side. The worst period of palpitations of the heart commonly lasts till an hour after midnight, or until the excrements have passed the region of the colon, which is situated on the left side, and have descended to the roman S. In the morning such patients can bear lying on their left side, without encreasing the palpitations by that posture."

(*Lentin* did not allow patients of this class to eat mealmeats, nor pulse, nor much vegetable food, nor to drink coffee or tea in the afternoon.)

„The diminution of the hemorrhoïdal complaint, accompanied by easy and natural stools prove that the thermal water has performed its part, to the satisfaction of the patient. While the water is using, I order the patient to take some tepid saponated baths, to promote a more equal distribution of blood, and about 5 o' clock one or two tablespoons full of an inspissated extract of quassia, with a strong infusion of mexican chenopodium, in order to promote digestion."

„The water of Wiesbaden having performed its part, I am apt to direct my patients to drink the water of Driburg or Pyrmont in small doses, to strengthen them, and at the same time, to ascertain, whether that of Wiesbaden have been used long enough; for if, after these waters have been drunk for some time, a return of hemorrhoïdal symptoms should take place, we

may conclude, either that the patient has too soon given up using the water of Wiesbaden, or taken the chalybeate water too copiously."

„In hemorrhoïdal affections of the bladder, too, the water of Wiesbaden is found to produce a prompt and excellent effect*). Persons afflicted with hemorrhoïdal disorders, are also frequently affected with strangury, in which frequent and very small discharges of urine, attended with pain, are repeated. Half a jar, and a clyster of this water were frequently sufficient to remove this disorder in a short time **)."

I could justify these observations of Lentin by numerous instances that are on record, must, however, observe, that these disorders are cured in a shorter time at the spring than at home, because the water retains there its natural warmth, and the *mineral-bath* ***), as well as the whole regimen, if properly regulated

*) In the *Jahrbüchern der Heilquellen Deutschlands* I have quoted the case of a lady who, suffering under an hereditary disposition to hemorrhoïds and hysteric fits, had been afflicted already for two years with painful spasms of the bladder, and incontinence of urine, and was cured in five days, by taking the water of Wiesbaden internally and externally.

**) *Lentin*, l. c. Vol. III.

***) The baths rouse the vital activity and resist the spasm, which so frequently check the effect of medicine.

by the physician, facilitate the cure in a high degree.

Hypochrondria, developing itself without hemorrhoïdal symptoms, and not giving way to a resolvent treatment, or rendered worse by this method, was formerly, and frequently very justly, denominated *immaterial hypochondria (hyp. sine materia)*, and thought to be a disorder purely nervous. The cure of it was very difficult, because the principal aim of physicians was to reestablish the harmony of the disordered nervous system, and to combat the symptoms. With this view they prescribed now bitter, then absorbent, and nervous medecines, baths, the drinking of chalybeate waters, travelling etc.

In cases attended with nervous weakness and languor of the entire organism, without any local complaint, the water of Wiesbaden affords no relief. Only when great acidity predominates, this symptom will sometimes give way to it; though this bath will prove very beneficial, if the water of Schwalbach be drunk at the same time.

How often does it, however, happen, that an abdominal disease exclusively confined to the nervous system, suddenly changes its character, preferably affecting the bloodvessels, and thus is transformed into an active hemorrhoïdal disorder!

I have had occasion to observe the case of a husbandman, who had been suffering the torments of hypochondria for some years; he was emaciated and ill-fed. His means did not allow him to attempt a radical cure, and he applied only from time to time for my assistance, when his sufferings were most painful. In spring 1821 he was suddenly seized with palpitations of the heart, and when these ceased, his pulse continued for some months to be full and hard, as in the case of fever. Discerning the character of his disorder, I made him come to Wiesbaden. Here he took half-baths, drank the water in copious doses, and was cupped in his legs several times. In twelve days the hemorrhoïds declared themselves in the usual shape and delivered him from his melancholy, anxiety and oppression of the stomach, which had tormented him so long.

Thus is it that patients, to whom the water of Wiesbaden might have proved injurious in the first stage of their disorder, derive relief from it at a later period.

Note. In this respect, too, *Kämpf's* method is very remarkable. He has, f. i. frequently treated cases of this nervous hypochondria *(hyp. sine materia)* with resolvent clysters — and cured his patients. But this treatment commonly required to be continued for a very long time, and 500—700 clysters were necessary, before the infarctions could be carried off. Methinks that he in such cases changed the dynamic character of the disease by

means of the continual and specific irritation produced by the herbs with which his clysters were made up, and provoked in the internal membranes of the intestines an active state, by means of which the infarctions were carried off. *Kämpf*, in general, attached more importance to the product than to the morbid state producing it — yet he cured the latter, by assailing the former, and mistook for the cause of the disease a substance frequently artificially produced by a resolvent trea ment carried too far.

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Remarkable instances of cures performed by means of the water of Wiesbaden.

Ritter relates in his journal of practical medicine (Vol. VII, ch. 3, p. 70) the case of a man aged 40 years, who, having previously been afflicted with hemorrhoïds, after an intermittent fever, which was improperly treated, was seized with an obstruction of the liver, accompanied by a violent jaundice, tumefaction of the caul, infarctions, gouty pains, melancholy, and a digestion totally disordered. The water of Wiesbaden restored his health completely.

In the same journal (Vol. XX, Nr. 3, p. 135) we find an account of a case of hypochondria with obstructions, cured in four weeks, and p. 141 a very interesting account of a disease of the abdomen, cured by means of the same water and that of Schwalbach, at the close of the treatment.

The reader will find in many parts of that work as well as in the annals of the mineral waters of Germany instances of this kind that occurred in mine own practice.

The malignant gastric fevers, and particularly the liver-complaints, prevailing in *both Indies*, and in the *islands* of the *Southsea*, are very frequently succeeded by dangerous or painful secondary disorders, which regularly have in their train a lingering sickliness, under which the body finally sinks. The organism being injured in its principal parts, life strives in vain to defend itself, behind these wrecks, against the destructive effects of the disease: death generally closes the scene in the course of a few years, by a dropsy or an atrophy.

Among the consequences of these endemic diseases of the Indies we must reckon: tumefactions of the liver, and the spleen, which frequently are encomous, as well as other tumors in the cavity of the abdomen: swellings and obstructions of the intestinal glands (which frequently also are the products of malignant cutaneous diseases, peculiar to the torrid zone), obstinate jaundice, spasms of the stomach, accompanied with a vomiting of food.

The english and dutch physicians have these many years been in the habit of sending patients of this class to Carlsbad or Wiesbaden, after those of the former first had tried Cheltenham to no purpose; and these two springs produce in the above mentioned diseases, an effect really wonderful *).

*) I beg leave, to add only a few reflexions re-

It affords the greatest satisfaction to the physician, to behold these patients, who on

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specting the english physicians, and the physicians sent by them to Wiesbaden, for the purpose of taking the benefit of our mineral water. The former, notwithstanding the extent of their medical intelligence (which I by no means desire to depreciate), seem to be inferior to the french, german, dutch and russian medical men, in their knowledge of the sanative virtue of the principal mineral springs, in chronic diseases, especially of the great resolvent influence thermal waters have on medical practice, which they clearly manifest by the sparing recourse they have to them in diseases that never are cured by means of pharmaceutical remedies. Nay, when they have made choice of a mineral spring suited to the case of their patients, they are rarely provided by them with a sketch of the apparent nature of their disease, of the different attempts that have been made to give them relief, of their individual constitution etc., nor a recommendation to a brother-physician residing on the spot. Instead of all this they frequently furnish the sufferer with imperfect instructions how to bathe and to drink the mineral water, how long he is to make use of it, etc. The patient confidently complies with the direction of his physician; but in the very first days of his residence at the wells he experiences already the bad consequences of his having followed such advice, and either leaves the bathing-place in a worse state than he was in when he arrived, or consults a physician resident at the wells, who gives better advice, but finds himself in the unpleasant situation of being obliged to correct the instruction of his patient's domestic physician, which ought never

their arrival exhibited melancholy, emaciated figures, with a tense abdomen, as hard as a

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to take place, however delicately it be done, as the patient's confidence in his domestic medical counsellor ought to be sacred to his thermal adviser. I flatter myself to have acquired by a long and extensive practice some knowledge of the manner of using the thermal water of Wiesbaden; yet I protest, that, if I, practising as a physician abroad, were to send a patient of mine to Wiesbaden, I should deem it a matter of conscience, not to dismiss him to the bath with a simple direction how to use the water, but think myself bound in duty, to recommand him specially to some physician residing on the spot; for the former will always, in the progress of the cure, be found deficient, insufficient, and even injurious.

I beg leave to add here some observations relative to the *patients* of that nation so highly distinguished by good sense and refinement of manners.

Many Englishmen, desirous of recovering their health at our wells, obstinately refuse to be convinced of the necessity of submitting themselves to a rigorous regimen, and for this very reason, very often return home without having derived any benefit from the use of our mineral water. Others there are, who, being used to the quick and striking efficacy of pharmaceutic medicines, and not considering, that the use of powerful mineral waters in the beginning produces an aggravation of the morbid symptoms, or slight additional sufferings, give up the use of the thermal water after the lapse of a few days, which is worse than if they never had begun it. — Either will find the needful information in this book.

stone, a tawny complexion, were indifferent to all enjoyments, and staggering along with lingering steps, after a residence of 3—6 weeks at Wiesbaden, and to compare the wonderful organic and mental palingenesis they have undergone with their late state of sufferance.

Patients of this kind generally repair to this place, in a very suffering state, after having exhausted all pharmaceutic remedies. In such cases the sagacity of the physician, whether the disease of the liver, the spleen etc. have already rendered these organs schirrous, or still retain the character of a morbid impulse of plasticity, by a congestion of blood, or a metastasis, or of substances having become foreign to the organism (f. i. the *placenta febrilis,* as it is called, after the tropic intermittent fevers), indicating a tumefaction of these important organs; whether a hectic fever, or dropsy be already on the way, and, this being the case, whether the patient still be capable of supporting the ex-

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I cannot let this opportunity pass, without observing, that a German physician is not used to be told how often he is expected to see his patient, when, and at what hour. We leave this to the delicacy and conscience of the physician. Two, or three visits in the week are regularly deemed necessary, whilst the patient is bathing and drinking the water, because infinite modifications are then taking place in the phenomena that manifest themselves, and it is according to these phenomena that the cure should be regulated, if it is to succeed.

citement caused by the thermal water, and of sustaining the vital action; whether the above mentioned organs, or the glands of the abdomen do not already betray a state of suppuration and whether these organs do not feel painful to the touch? In this stage of consumption *the thermal water of Wiesbaden may not be applied without injury.* I believe, I have sufficiently pointed out, in the preceding chapters, the exact limits of the efficacy of our springs in diseases of this kind, and now shall add only an account of some practical cases.

A young man, who always had enjoyed excellent health, was, after two years residence in America, on board of a vessel, in Virginia, infected with the yellow-fever, which then was sweeping off great numbers. In consequence of a fright, caused by the sudden breaking out of fire, and his having eaten some forbidden fruit, he had several relapses of that disease, which at last turned into a quartan ague, accompanied by liver-complaints, and lasted five months. The manner in which the latter was cured, never came to my knowledge; however, from that time his abdomen became the focus of his sufferings.

In 1822 he returned to Europe, where he soon contracted a small syphilitic ulcer, which, however, was reduced by a treatment purely local; some time after he was seized with a very violent inflammatory colic, which was treated

with copious doses of mercury. From that period he became subject to a profound melancholy, of which he expected to get rid by embarking in a voyage to the Brasils. On this voyage (Apr. 1823) he contracted, by catching cold, a quinsy, which, somewhat later, was aggravated by an inflammation of his bowels and bladder. His abdomen tumefied excessively, as well as his inquinal and maxillary glands. As there was no medical man on board the vessel, he saw himself constrained, to bleed himself twice, at the same time taking calomel-pills, and no other food but watergruel and oil of olives. Arriving at length, after a two months' voyage, at the place of his destination, he had so far recovered from his severe disease, as to be able to perform the duties of his profession (he was a merchant); however, his uncommon activity in a temperature of 100 degress Fahrenheit, plunged him, after six weeks, into a new disease. The integuments of his head tumefied, and gave him the most violent pain, whilst his whole body was covered with an eruption, forming large pustules, which for six weeks secreted an extremely fetid ichor, and, at last, an uncommonly obstinate scurf, continually regenerating itself. He was treated with a decoction of sassaparilla, calomel, tepid baths, and in five months proceeded in his recovery far enough to be allowed to expose himself again to the open air. The eruption in his

face and legs did, however, continue for some months more.

The patient felt in the region of the stomach an oppression continually encreasing, which his physician took to be a disorder of the liver, advising him to return to Europe as speedily as possible. This advice was followed directly. But the tumor in his side encreased on the voyage. Tumours of the hemorrhoïdal veins appeared at the same time, and the discharge of urine was attended with pain, which probably was the consequence of that congestion of blood towards the organs of the sinus. When arrived in Europe, two physicians attempted to cure his disease by pharmaceutical remedies, directing him, in the spring of 1825, for six weeks, amongst others, to drink the juice of herbs, though with no perceptible result, as to his abdominal disorder. In the summer of the same year, they sent him to this place. The state of his health now was as follows: his features were expressive of the profoundest melancholy; all cheerfulness had abandoned him; his complexion was of a sable yellow tint, and his skin, all over his body, dry and rough. His liver was considerably tumefied; he felt an anxious oppression in the region of the stomach, his digestion was very difficult, and his abdomen considerably tumefied. Some scabs of tetters, the remains of a prior eruption, which, however, seemed to be connected with blind hemor-

rhoïds, were still to be seen on the inner part of his thighs. The patient, who was extremely distrustful, and despaired of his recovery, soon grew very fond of our mineral water, as it almost immediately exercised a very favourable influence upon his appetite, digestion, and evacuations. But when both the internal and external use of our water began to act jointly upon his body, and crises commenced developing themselves, both by the skin and the stools, and, in consequence of this activity of nature, slight fits of fever, with great weariness, took place, his anxiety and despair of his recovery rose so high, as to induce him to quit the wells suddenly, after he had taken about 23 baths. This improper and rash step was particularly owing to an excruciating pain in his limbs, which seized him chiefly when he was in the bath and which he never had felt before. This pain, however, was the consequence of the reanimation of the activity of the skin, and of the autocratic tendency of nature, to form metastases towards the external parts, and thus to relieve the internalones, which are more necessary to the continuation of life.

I have observed already in a prior part of this work, how dangerous it is abruptely to discontinue the thermal treatment, when crises are beginning to be effected by the external and internal use of the water. With this young man the consequences were not, however, so

fatal; on the contrary, we have reason for admiring in this remarkable instance the exciting power of nature; for the jaundice and tumefaction of the liver, which had taken place already, disappeared entirely in the six subsequent months, whilst his appetite, digestion and mental tranquillity were considerably improved. He had, however, to struggle for a whole twelvemonth with excruciating pains in his limbs; a dropsy of the articulation of both his knees began to appear, which rendered it very difficult for him to move them. His abdomen was far from being entirely free from obstructions; hence, congestions of blood towards the sinus took place, a hemorrhoïdal gonorrhea attended with severe hemorrhoïdal tetters, acceded, covering even the inner superficies of his thighs, and this accumulation of sufferings rendered his situation very melancholy.

In this condition the patient returned to Wiesbaden the subsequent summer. During a treatment of four weeks, in which he was made to use the thermal water both internally and externally, whilst, at the same time, douche- and local vapour-baths were applied to the articulations of his knees, the latter were completely cured, the pains in his limbs disappeared, and the hemorrhoïdal congestion, as well as the gonorrhea and tetters, being the consequence of the latter, were considerably reduced, and disappeared entirely some months after this

second treatment. The functions of digestion regained their normal condition. In 1828 he visited our bath a third, and in 1829 a fourth time, because, being of a disposition of an evidently hereditary hemorrhoïdal nature, some symptoms of tetters made their appearance again in his legs. Those that had not seen him for four years, did not know him again. The melancholy, emaciated, sallow looking old man had been transformed into a young man of 29 years, amiable, cheerful and blooming, enjoying again his existence by the side of his young consort.

I shall close this subject with a brief account of the restoration of an east-indian traveller.

The count *v. R. L.* had resided for some years in the island of Java. There he got an endemic malignant fever, which was followed by a tumefaction of the liver, and a sensible swelling of the spleen, attended with a very defective digestion. After various fruitless attempts to recover his health, he returned to Europe, and was advised by his physicians, to try the waters of Wiesbaden.

On his arrival he was emaciated, and rarely could keep on his stomach the food he took. His appetite was trifling, and the skin of his whole body of a yellow tint.

The thermal water, which he drank in the first week, without bathing, agreed very well with him, when he took it three times a day,

in small doses and a few drops of essence of peppermint after it. Having continued this course a few days, the vomiting grew less frequent, and at length ceased entirely. He took, at the same time, daily a few clysters of thermal water, which generally were resorbed. After the first week he also began to bath, though not every day. Yet, though he did not remain in the bath longer than 20—25 minutes, and had only every 3—4 days a douche-bath applied to his abdomen, he was affected so violently by this procedure as to begin to feel feverish, which obliged him to drink the water only in small doses. Salutary as such slight critical febrile fits always prove themselves, yet they are very apt to overstep the limits, within which they are wholesome, and then form essential and complicated disorders, if we cannot contrive to moderate the action of the mineral water.

At the end of the fourth week I allowed the patient to depart, the critical febrile affections having ceased, his digestion being in a proper condition, and the tumefaction of his liver and spleen considerably reduced.

I advised him at the same time, to have every day a soup and a plate of stewed purslane *(Portulaca oleracea)*, a vegetable highly salutary in complaints of the liver and the spleen.

This patient visited Wiesbaden again the following spring. His complexion was bloom-

ing and his appearance cheerful; yet though the tumour of his liver and spleen had entirely disappeared, he was not completely cured of the jaundice, feeling a pressure upon his stomach after his meals, and, sometimes, stitches in his liver. He was now able to make amore frequent use of our mineral water, and after having taken 25 baths, left Wiesbaden in perfect health.

Remarkable evidences.

Ritter relates in his *Journal der praktischen Heilkunde,* Vol. VII, Nr. 3, p. 70 the case of a schirrous liver, attended with an high degree of jaundice, swelling of the spleen, infarctions, gouty pains, melancholy, indigestion and great emaciation, after an intermittent fever, improperly treated, of a man of 40 years, who had previously been subject to hemorrhoïdal sufferings. He left Wiesbaden completely cured.

In the same journal (Vol. XX, Nr. 3, p. 135) we read a case of hypochondria, with infarctions, which was cured in four weeks, and p. 141 the interesting account of an abdominal disease, cured by the use of the waters of Wiesbaden and Schwalbach (the latter as secondary treatment).

Evidences furnished by my own practice occur in many passages of this work, as well as in the *Jahrbücher der Heilq. Deutschlands.*

CHAPTER XII.

Effect of the thermal water of Wiesbaden in gouty complaints, rheumatism and cutaneous diseases. Use of topical and general mud-baths.

THERE is a disease, in many respects intimately connected with the disorders just mentioned, I meen the *gout* known already in ancient times to be susceptible of being cured by means of our thermal water. I shall place at the head of the subsequent observations that form of disease, which evidently is generated in the abdominal vessels, and is attended with many other disorders, or, at least, alternates with them.

Whilst the *internal* use of our thermal water checks the pseudo-reproduction, which is the basis of gout, and thus counteracts the disposition to that malady, and, assisted by a proper regimen, removes it *) completely: the

*) *Kreisig* attributes the efficacy of the mineral water of Wiesbaden in gouty complaints to the great

bath overcomes the symptoms attending it, such as pains, stiffness of joints, schirrosities, sometimes even tophus, the most obstinate cutaneous eruptions, paralysy, atrophy of the limbs, and other disorders, provided they do not consist in incurable disorganisations, of which I have treated in a preceding chapter.

The more inveterate the disease is, the more adviseable is the use of our mineral water. Mr. *Fenner* of *Fenneberg* says*): „The water of Wiesbaden, moreover, cures gouty and rheumatic disorders, which are the consequence of continual and violent interruptions of the cutaneous functions, owing to damps, excessive fatigue, bivouacs, campaigns etc. The morbid cutaneous organ requires, in such cases, a violent provocative, powerfully exciting the checked action of its vessels. Used as a bath, it cures gouty and rheumatic disorders, which have developed themselves in the retinue of suppressed scabious, herpetic, or psoric cutaneous eruptions."

In metastatic gouty complaints, appearing in the form of asthma**), spasms of the stomach, or the iliac passion, as it is called, the

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quantity of soda it contains. *Krankheiten des Herzens.* Vol. I, p. 159.

*) *Taschenbuch für Gesundbrunnen und Bäder.* 1816.

**) *Ritter* reports a very remarkable cure of *Angina pectoris.*

efficacy of our water has proved itself equally powerful as in those painful disorders, which we distinguish by the denomination of *syphilitic* and *mercurial gout.*

It would afford very little interest, if I were to give an account of some cures of gouty diseases. Whoever in the bathing season sojourns with us a few weeks, will have many opportunities to observe instances of it. Yet, I beg leave, for the purpose of proving the great efficacy of the water of Wiesbaden, in the *above mentioned disorders,* to relate only the following, out of a great many I had to treat.

A woman 25 years old, had ever enjoyed good health and been married some years without becoming pregnant. In the year 1818 she was suddenly seized, without any apparent cause, with very severe pains in the articulations of both her elbows; whilst her right arm began to swell, and became useless to her. Two physicians, who attended her successively, suspecting the presence of a latent syphilitic virulence, made her undergo, within the space of fifteen months, two courses of salivation, which reduced the swelling of her arm, though the pains in her elbows did not abate in the least. In the second mercurial course two of her teeth detached themselves from their cavities, and the carious upper jawbone was seen to emit a purulent fetid matter. In this condition she became pregnant, and now her pains

abated gradually. She was delivered of a healthy child, but did not suckle it, as she was too feeble, and had but little milk. In a few weeks she was seized with excruciating pains in the sternon, which had begun to swell already previously to her pregnancy, and the tumour rose to the size of a fist; vague, excruciating pains gradually affected all her limbs, but were particularly felt in the integuments and bones of her head, which soon assumed such an oblique direction, as almost made her chin touch her right shoulder.

In this condition a third physician was consulted, who again made the patient undergo a mercurial course, which, however, brought on general cachexy attended with fever. Tonics of all kinds were applied in vain against this alarming disorder, nor could antarthritics and narcotics remove her excruciating pains and the sleeplessness that tormented her. Weakness and emaciation had, in consequence of her total want of appetite, and the uninterrupted continuance of fever, reached their climax — she perspired violently every morning and after the slightest exertion; when she sat up, her attendants were obliged to support her head; but she kept her bed almost continually.

In this deplorable condition she arrived here in May 1820, resting her last hope on the efficacy of our water. She bore all the marks of the completest mercurial cachexy; the dy-

namic and organic economy of her body was totally disordered. The weather being, from the time of her arrival to the middle of June, very windy, damp and cold, her state was rendered worse, as patients of this kind are particularly in want of a pure and mild air. Yet her courage did not desert her for a moment, her spirits being kept up by the hope of final recovery — a state of mind that promised the happiest result. She now began to bathe two days successively, each time for a quarter of an hour; the third day she rested, and then gradually prolonged the time of bathing to half an hour.

The twelve first days produced no visible change, besides a slight encrease of appetite and strength; she also slept sometimes a few hours at night. Now she could remain in the bath three quarters of an hour, every day, during which time she felt no pain, from which she also was free, whilst enjoying a very refreshing sleep immediately after coming from the bath. After this short respite her pains returned. I now made her take douche-baths upon her head, neck, the tumour of the upper jawbone, the sternon, and gradually also upon the other painful parts of her body.

The result was both prompt and astonishing. Her pains decreased daily. Against the end of the fifth week after she had taken about 25 common-and 14 douche-baths, she was

entirely without pain; not the slightest symptom of fever remained; she slept well and her appetite was excellent.

She had gained a great deal of strength and flesh, and could every day take frequent and long walks in the open air; her neck had a much better posture, the tumour of her upper jawbone had decreased considerably, as well as that of her clavicle. Her domestic concerns requiring her presence at home, at the latter end of June, I consented the more readily to her departure, as she purposed to take a second short course of bathing, and thus might expect to reap a twofold secondary benefit.

Numerous observations have convinced me, that this secondary effect of the external or internal use of our mineral water is as salutary, and frequently even more successfull than the bathing course properly so called. This observation was corroborated particularly by the instance of this patient.

On the third of August she returned to Wiesbaden Her health had improved astonishingly in the intermediate time. She had continued quite free from pain, regained a good deal of flesh, and had a vigorous and blooming appearance. She could now hold up her neck straight, and it inclined only slightly sideways, when she forgot holding up her head.

The tumour of her sternon was hardly

perceptible, and the ulcer of her jawbone emitted no offensive smell. She bathed every day three quarters of an hour, and had the douche-bath applied to her sore cheek and sternon. The carious jawbone was frequently touched with a mixture of *Ol. Sabin.* and *Ol. Amygd. d.* This treatment soon rendered it moveable.

Having caught cold, she got a catarrhal fever, and, consequently, was obliged to discontinue bathing. This circumstance protracted her complete recovery, especially as she was obliged to return home after the lapse of three weeks, in which she had been able to take only 12 baths. Her neck recovered a completely straight posture, after the first weeks' bathing; in the same space of time the tumour of her neck and face disappeared also completely, after the carious part of her upper jawbone had detached itself. The sore closed rapidly, and the person has enjoyed an excellent state of health *) ever since.

The most ancient records of medicine men-

*) I deem it superfluous here to enumerate the host of diseases arising from *rheumatic causes,* which, as every practical physician knows, are cured by the use of thermal waters. *Ritter* mentions, among others, a very interesting case of diabetes, which was cured by 78 of our baths. This rare disease, which evidently had been caused by catching cold, was attended with a hectic fever and great emaciation. L. c. p. 151.

tion already the use of baths in cutaneous disorders, and the efficacy of thermal waters in diseases of this kind.

I shall make only a few remarks upon these exanthemata and their relation to the thermal water of Wiesbaden, because this subject is already sufficiently familiar to physicians.

Bathing is particularly efficacious, when the cutaneous eruption is owing to a checked perspiration, and this form of the disease is cured most promptly, especially when the exanthemata present a moist surface, and the patient is free from fever. After the first baths the secretion generally encreases a little. The bath, further, proves very efficacious, when the eruption is the consequence of a checked feverish state, and has a character purely local.

The *external* and *internal* use of the water of Wiesbaden being recurred to simultaneously, its salutary efficacy is particularly powerful, when the exanthem is connected with gouty and hemorrhoïdal affections, or has been caused by liver-complaints, infarctions or obstructions in the portvein.

Among this class must also be placed metastatic affections arisen from cutaneous diseases, such as tetter-blennorrheas of the urethra and vagina (which, as *Weinhold* justly observes, frequently terminate in a complete decay of strength), chronical coughs, asthmas, disorders of the bladder, diseases of the womb, which,

if owing to *such* a cause, frequently are the harbingers of very fatal consequences.

(I beg leave to subjoin here a few additional observations.)

Eruptions of tetters attended with considerable scorbutic dyscrasy, require that the patient should stay at Wiesbaden, until they are cured completely. If a high degree of cachexy should show itself at the *same time,* the water of Wiesbaden is *injurious* to scorbutic dispositions.

In inveterate itches, and psoric tetters, as they are called, the baths of Wiesbaden are very salutary, and accelerate the cure of them; but it is necessary that specific remedies should be used simultaneously.

This is likewise the case with regard to cutaneous syphilitic diseases.

An account of the following case will not be deemed improper in this place.

A young man of the age of 32 years, being afflicted with coxalgy from his childhood had frequently had to struggle for some years past with a chronical urtica (nettle-rash) and fits of the gout, arising from a hereditary disposition. His situation obliged him to travel sometimes to Russia in winter, when he used carefully to case his legs in furboots. A single omission of this precaution might have been expected to prove injurious to his health, which actually happened, for in consequence of his having caught cold, a moist eruption soon ap-

peared on his chin and the whole lower part of his face, which were of a livid colour, in the form of large pustules, itching excessively and leaving behind thick scabs. His physician, a genuine disciple of Hyppocrates, vainly strove, for two years, to overcome this disease, applying all the means the medical art offers: the eruption disappeared only once, on the access of gouty symptoms, but returned in its former shape as soon as the latter had been removed.

A celebrated physician advised a mercurial treatment, after *Weinhold's* method; however the patient's regular physician recommanded the baths of Wiesbaden.

However, the patient, whose endurance was unequal to the obstinacy of his disease received, on the approach of the spring of 1820, from a surgeon, a salve which soon made his eruption disappear.

His physician now urged more pressingly than ever his departure for Wiesbaden. He arrived here in the month of May, and made use of our thermal water both internally and externally. Either agreeing with him very well, he prolonged his stay in the baths to one hour and a half and raised the quantity of water he drunk, to four rhenish shoppins a day, which made his eruption reappear in its pristine form.

Pressing affairs not allowing the patient to stay here beyond four or five weeks, he soon

took two baths daily, and thus remained for some hours in the bath. In the intervals he applied formentations of sinter-soap to the suffering parts, which raised the eruption to the highest degree.

Against the latter end of the fifth week he departed from here, giving little credit to my assurances of a successful result, and my entreaties, supported by those of his physician, to have recourse to no other remedy whatever. I might confidently give him this assurance, because his eruption emitted less moisture at the end of the fourth week, and some scabs detached themselves, which in this instance was a sure prognostic of a speedy termination of his sufferings.

Some months after his return from Wiesbaden the patient, without having made use of any additional remedy, was entirely delivered from his disorder, which was a kind of *mentagra*, and has enjoyed an excellent state of good health ever since *).

With the addition of natron and oil, I make

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*) In the *Journal der practischen Heilkunde* (Vol. VII, Nr. 3. pp. 74. 76 and 78) *Ritter* has communicated some interesting observations relative to this subject; among others, he gives an account of a case of tetters, which broke out after an intermittent fever, and after having obstinately resisted all medicines for a whole year, were at length cured by *two* baths at Wiesbaden.

of the earthy settlement, which our water leaves while gradually cooling, a soap, of which I make use in cases indicating general or topical mud-baths, namely in obstinate cutaneous eruptions, paralyses, contractions of articulations, violent pains, cold tumours etc. I employ this soap with eminent success in the general baths, but apply it also sometimes to the suffering parts in the shape of fomentations moistened with thermal water, repeatedly renewed at a convenient temperature. Thus I obtain, even in the intermediate time of the general bathing-season, the salutary results of a real *topical* bath. How often is it desirable in the practice of medicine to have it in our power to localize, if I may be allowed the expression, the effect of bathing, because the body of the patient, enfeebled as it is by his sufferings, cannot bear a *prolonged* continuation of the effect of the thermal water used as a general bath, though urgently demanded by his state!

In the ancient monographies of Wiesbaden, it is proposed, to lay this sediment, which is no longer mixible with the water, during the day, immediately upon the suffering parts. But it is certain that the desired effect is much more completely obtained, by the preparation I have mentioned, because it retains the specific warmth much longer than the rude sinter. The authors of these monographies, f. i. *v. Hörnigk*, deemed this *bathing mud* more efficacious than

the thermal vapour-baths, which is an error, though it cannot be denied, that by the above mentioned method, introduced by me, in which the sinter is made the conductor of the thermal water, this topical bath, must, in particular cases, be by far preferable to the local mud-bath.

CHAPTER XIII.

Efficacy of the mineral water of Wiesbaden in the chronical pain of the face (Trismus dolorificus of Sauvage), demonstrated by a series of observations.

All practitioners of the healing art will, no doubt, have observed that within the last 12 years chronical pains of the face have occurred more frequently than ever, in a continually rising progression. I do not intend to investigate at present the cause of this phenomenon, nor to enter into a diagnostic discussion, to ascertain whether any part of the subsequent cases may be referred or not to the class of the genuine pain of the face described by *Fothergill (Tic douloureux, Trismus dolorificus,* as *Sauvage* calls it). Having had numerous opportunities to observe this disease in a great variety of shapes, I am persuaded that nature, in this instance does not always conform itself to the descriptions of our pathological treatises, and that these maladies form an immense chain of

very simple, though intimately connected, links. I shall, therefore, abstain at present from investigating the nature of these disorders and add only a few observations upon the cases I am going to give an account of. Out of the great number of observations upon these complaints I possess, I purposely have not selected such, as are striking on account of their rarity. I shall, however, mention some of them, because their apparent purely rheumatic character, with nervous, almost hysterical, complication might easily mislead physicians to mistake the appearance for what they really are.

It will be plainly perceived, that with all patients the history of whose diseases I am going to relate, though their complaint manifestly appeared the consequence of a rheumatic metastasis, the original cause of their malady was abdominal plethora, indicating either a manifest hemorrhoïdal disposition or hemorrhoïds that once were fluid. Experience teaches us, that in this state of the veinous system of the abdomen pains may arise in all parts of the body, frequently shift from one part to another, but never can be cured, unless the obstructions *(stases)* of the abdominal circulation be previously removed. The hemorrhoïdal flux periodically balances this plethoric state, and thus the congestion is removed for some time, to which I impute my never having seen a person having fluid hemorrhoïds, afflicted with pain

in the face, while that state lasted, though he was seized with that tormenting complaint, as soon as they ceased to flow. Now, this kind of complaints it is principally, in which the external and internal use of the mineral water of Wiesbaden may be esteemed a sovereign remedy, while purely *rheumatic* pains of the face may be cured by any other thermal water.

First observation.

A man aged 43 years, came to Wiesbaden in an extremely painful state. He had been for several years afflicted with hemorrhoïdal disorders in various shapes. Abdominal tumefaction, sometimes hemorrhoïdal tumours, constipation, hepatical pains, and an excessive hypochondriacal anxiety, were for some time his principal tormentors; to these acceded in the winter of 1817 to 1818 a most excruciating pain in the whole left side of his face. The patient was proprietor of a manufactory, whence it was supposed that the influence of his profession had been the original cause of his complaint, which was judged to be of a rheumatic nature. However, the sudor*i*fic and antirheumatic remedies, employed by his physician for a long time, afforded him as little relief as the drawing of many rotten teeth of the suffering side. A resolvent and evacuating treatment, together with the application of leeches to hie anus, alleviated his hepatical pains, reduc ed ths

tumefaction of his abdomen and his sleeplessness; whilst, however, the pain in his face did not abate in the least. This pain and his hypochondriac depression of mind having risen to the highest degree, and the latter having turned into profound melancholy in spring and summer, his physicians resolved to send him to Wiesbaden, where he arrived in August 1818. In addition to the above mentioned symptoms and a greyish complexion, he had been jaundiced for some months, and troubled with oxyregmy, whilst his digestive faculty had become completely paralysed. It was found necessary to watch him carefully, as he meditated suicide.

Apprehending that the bath would prove too exciting to a man as irritable as I found him to be, I made him only drink the thermal water, at first. He drank the water lukewarm, the largest dose at six o' clock in the morning, the second at 11 o' clock, and one more at 6 o' clock in the afternoon; in a few days he could already bear about four pounds a day. In eight days the acidity on his stomach had left him completely, his stools become regular, his abdomen was less tumefied, his appetite improved, and his hypochondriacal anxiety lessened. Now he bathed, at first in the evening, at a temperature of 26 degrees R., for a quarter of an hour, advancing five minutes daily. His pain, which never left him entirely, assailing him violently every day twice or thrice for half an

hour, seemed even to encrease, after the first baths. His sleep, however, improved, and after ten or twelve baths, his painful fits were perceived to be already considerably less intense and of shorter duration, and at intervals he was entirely free from pain for whole hours. He gradually raised the quantity of the thermal water he drank, to 72 ounces, taking every other day some doses of *magnesia sulphurica* (sulphat of magnesia), as it now was necessary that he should undergo copious evacuations, which did not allow his taking the water in encreasing doses. He now had very copious stools of a peculiar appearance and an excessively strong smell. His strength returned gradually; one evening, however, he was suddenly seized with a most anxious oppression in the precordial region and a complete syncope, accompanied with pectoral spasms; having occasion to go to stool, he evacuated an enormous quantity of excrements, in seize and appearance resembling those of sheep, of a black colour, so hard and incrusted (probably with bilious matter), that they rattled like stones against the inside of the vessel. Some time after he had several more stools of this sort, though attended with symptoms less tempestuous.

I was highly rejoiced to observe the sudden change which now took place both in the physical and moral state of a patient who had been suffering so severely and hopelessly. He felt

himself immediately delivered from the oppression in the precordial region; his stools were of a natural colour, the greyish hue of his complexion disappeared, his melancholy features began to be enlivened, along with his mind, by the cheering hope of speedy recovery, which became so strong that he was seized with the most lively desire to return to his family, to which he seemed to have felt little or no attachment for some years past. This nostalgy, which I did not think proper to oppose, induced me to suspend his cure for the present. I was, however, sorry to see him leave Wiesbaden after he had taken 23 baths, the pain in his face not having ceased entirely, though he had only slight fits of it at very indeterminable periods. This circumstance made me expect that he would return to us the next season. But I was mistaken Having been with his family for some time, in a state of general good health, the pain in his face, which till then had affected only his *left* cheek, suddenly seized the *right* side of his face, fixing itself in a rotten tooth. When this had been extracted by the advice of his physician, this painful complaint ceased entirely and has never returned since.

Second observation.

A young man, who had been in good health until the year 1814 was, in consequence of causes

manifestly atmospherical, seized with rheumatic complaints in various shapes. At first, he felt, until 1819, pains in different limbs, which, however, were most violent in his right arm. From these pains he was delivered in the same year by a pulmonary catarrh, which lasted a whole year. In spring his complaint assumed a third form; his chest became free, but his right eye and the parts surrounding it were affected with piercing and incessant pains, whilst the optic faculty of that eye was considerably impaired. A celebrated physician of Erlangen succeeded, after a treatment of two months, in saving the threatened eye and calming his pain in a great measure.

In 1824 the disorder seized his organs of digestion. The patient felt a very troublesome oppression on his stomach, accompanied by continual eructation. He vomited after every meal, which, along with a chronic diarrhea, that lasted some months, exhausted his strength. He was at the same time every night troubled with a copious cold sweat, which obliged him to change his linnen. Now he did not feel the least pain in his eye, though it continued to be weak. Several months passed without any new change of his disorder taking place. Now his abdomen was suddenly delivered, whilst the internal parts of his neck got inflamed. This inflammation was more painful than violent, and at the end of the third month was superseded

by a general and external headake, concentrating itself chiefly in his right eye and its environs.

Medicines now appeared to be of no avail at all, and as his left eye also began to smart and its visual faculty to be impaired, he repaired to Wiesbaden for relief. On his arrival he was in the following condition: a gnawing pain had settled particularly on his right eye and the surrounding parts, though it also affected in a less degree his left organ of vision, his cheeks and his right ear. The pupil of his right eye was considerably enlarged and nearly immoveable. He was able to distinguish with it confusedly only large objects. His abdomen was very tense, his digestion slow; his complexion and entire physiognomy bore the marks of intense suffering.

The patient bathed, at first, in the evening, at a temperature of 20° R., for half an hour; in the morning he drank a considerable quantity of thermal water, and at length in the afternoon likewise, which at first procured him some liquid stools. Having taken six general baths, in which he gradually remained an hour, he made use of the vapour-apparatus, having a concentrated column of vapour of 36° R. for a quarter of an hour directed upon his right eye and the parts surrounding it. After this operation, the suffering parts were covered, and the patient went to bed, when a copious sweat ensued. Having taken four such douche-baths

and ten general ones, both his pupils became contractible and easily moveable, while his excessive pain subsided considerably. When he had taken 14 douche-baths (which, however, were not applied every day) and 27 common ones, he departed completely delivered from all his pains, and able to use his right eye, which had been so extremely painful, in reading and writing. His faculty of digestion was re-established completely, the greyish, smutty hue of his countenance was superseded by the clear complexion of a healthy person, and his former melancholy had given room to the most cheerful disposition of mind.

Third observation.

A very robust man, who, however, was sometimes troubled with a hemorrhoïdal flux, took cold, whilst he was affected with a *miliary eruption.* Wandering rheumatic pains, together with a strong propensity to copious sweats and a hypochondriac disposition, were the immediate consequences of it. These ills greatly subsided gradually, but returned a few years after more violently, while his hemorrhoïdal flux stagnated. The pain now did not settle on any particular part of his body, but was wandering about from one limb to the other. A sweat, into which he could be put very easily, generally removed these fits in short time; they returned, however, soon after, attacking some

other part of the patient's body. As this could be brought on by the slightest neglect of regimen, one fit followed the other, and at last his disorder manifested itself with particular intensity in the nerves of his face. His skin was continually moist, and disposed to sweats not proportioned to the patient's strength. His hemorrhoïds had ceased to flow, though frequent painful sensations in his reins proved that they were secretly active. He was, at the same time troubled with a very uneasy sensation, proceeding from the tumefaction of his abdomen. During his sufferings he had given way to melancholy and become very apprehensive about his life, which gradually rendered this amiable and generally esteemed man insusceptible of all social enjoyment. In this state he returned from Magdeburg, his usual residence, to Wiesbaden in 1826. After the thirteenth mineral bath the pain in his cheek grew considerably more violent, he had an access of fever, and nearly his whole body was covered with what they call the *miliary* bathing eruption, which never left the patient entirely during his stay at Wiesbaden. At the end of six weeks the pain in his face, which began to subside sensibly, immediately after the appearance of the miliary eruption, was now very supportable, the access of fever became less frequent and intense, the sweats were less profuse, and the tumefaction of his abdomen, together with

the hypochondriac oppression, had disappeared entirely.

A very decisive material crisis having taken place while the patient was using the thermal water both externally and internally, the functions of the organs of digestion, and of the cutaneous system being regulated, and the general operation of nutrition of his whole body having attained new vigour, I could confidently assure him that his recovery would be completed at home. Three years after, I was informed by his physician, that the patient, on his return, had appeared to have been weakened very much by bathing', but soon recovered his strength, and then was enjoying a better state of health than ever.

Fourth observation.

The physician of Mrs. K**, aged 38 years, informs me: „The chief complaint of this lady is a violent pain in the head, which does not, indeed, invariably occupy the same place, yet commonly throws itself for a shorter or longer period on the temples, the ear, the cheek, or the teeth of one side of the head. She is rarely without this pain; yet, owing to trifling causes, she is frequently seized with fits of it so exceedingly violent as to render her completely senseless; her extremities then grow icecold, and, in consequence of a spasmodic contraction of her muscles, quite stiff. These fits last some-

times several weeks, before the pain gradually subsides to that moderate degree in which the patient has felt it almost uninterruptedly for some years."

„Her father was affected with a disorder completely analogous to hers, and her mother is afflicted with a manifest abdominal plethora. The skin of this lady is regularly rigid and dry; she perspires very rarely, not even in situations in which other people would suffer the most copious secretions of sweat, and the most powerful diaphoretic medicines were required, to produce only a gentle transpiration, which invariably afforded her considerable relief. Hysterical symptoms in various shapes prove that her nervous system is greatly disordered, and frequent indigestions, together with a considerable loss of flesh, and a smutty greyish complexion prove that the assimilating power of her organism is materially injured. Medicines procured only momentaneous relief" etc.

This patient bathed and drank our thermal water in a manner most convenient to her delicate and highly irritable constitution. From the eighth day bathing procured her every day two or four liquid stools. She had at the same time a strong spouting douche applied to the suffering parts every day. During the latter operation her pain encreased considerably, but immediately after it, it subsided in a much great-

er degree. Vapour-baths excited it so violently, that she could make no use of them.

This patient too, while bathing and drinking the water, experienced a considerable general alteration, an encrease of pain, together with a slight fever, which used to last some days, and her body was in a state of general irritability all the time she staid at Wiesbaden. Her skin, however, was completely active, her complexion much clearer, her mind cheerful, and her digestion in a regular condition, after she had drunk the chalybeate water of Schwalbach for a fortnight. Hence I could safely dismiss her with the full persuasion of her speedy recovery, after she had taken 43 common- and 35 douche-baths. On her return home she had a violent relapse, but when it was over, she regained daily more strength, and in the cold winter of 1828 to 1829 had only a few slight accesses of pain.

In the summer of 1829 her physician sent her once more to Wiesbaden. She had in the mean time regained such a youthful and blooming appearance, that I scarcely did recognise her and has enjoyed an excellent state of health ever since.

Fifth observation.

Mrs. Anatagor, a Greek lady by birth, had exchanged her native country for the *Brasils*, where she enjoyed a good state of health for

some years. She then accompanied her husband on a voyage to Portugal, and thence, after a short stay, to *North-America,* where she intended to fix her residence for the future. On the latter voyage she was, at first, seized with burning and gnawing pains in her legs, not attended with tumefaction. On her arrival at her new place of residence she applied for a long time different remedies, but to no purpose.

At length her pain threw itself from her legs upon her arms, her abdomen and the muscles of her chest. In a few weeks it quitted these parts too, rising to her head, attacking her left cheek, eye and ear, and spreading to the crown of her head and her occiput. She now experienced daily some irregular accesses of it, which lasted from half an hour to several hours. Sometimes it ceased entirely, but in the individual accesses (especially, when rheumatic influences were joined by febrile emotions), frequently rose to such a dreadful hight, as plunged the patient into total insensibility. The most eminent physicians of Newyork, who pronounced her complaint to be a genuine *Tic douloureux,* were incapable of curing it, and advised her to proceed to Wiesbaden.

In May, 1826 she embarked, in order to proceed by the way of Holland to Wiesbaden. She was the more apprehensive of the consequences of this voyage, as her legs had become painful on her first sea-voyage. However she

had scarcely lost sight of the shore, when her pain ceased entirely, until she arrived in Holland, where it reappeared in its former virulence, although the weather had been fine and warm, during and after her voyage.

This lady arrived here in August. She had a bilious, greyish-yellow hue, was emaciated, without, however, showing a hereditary sickly disposition; yet the functions of her biliary system, as well as that of her portvein, were disordered. As for the rest, she did not betray any manifest hemorrhoïdal symptoms; yet it appeared that the regular circulation in the veins of her abdomen was checked, while her menses were copious, though setting in proper season.

Having taken our thermal water both externally and internally for fifteen days, she was affected with a slight fever, which was, however, attended with more violent accesses of her pain, and by sweating took a decisive turn on the fifth day. Now the patient began to mend visibly. When she had taken about twenty baths *), she experienced a new febrile

*) I sincerely regret that I cannot state this *exactly*, and was equally sorry at that time to see the cure of this lady so often interrupted, while nature was developing so regular and extraordinary an activity, and displaying such rare phenomena. However, although the patient had traversed half the globe, she still was possessed with a real rage for

excitation, attended, like the first, with sweats, which, however, were much less copious, and followed by accesses of pain, though of shorter duration, and less intense.

Having bathed 27 times (she took no douche-baths, but plunged her head into the water), she left Wiesbaden, and found herself decidedly mended, as well with regard to the general state of her health, as to the access of pain, purposing to complete her cure in the next summer.

In May 1827 she returned to us, and I was surprised to hear the following account of what had happened respecting her health in the intermediate time.

Soon after she had left Wiesbaden, the preceding year, she perceived that the transpiration of her head and neck was of an *oily nature,* which obliged her frequently to change her caps, neckerchiefs and body-linnen, that had the appearance of being steeped in oil. This secretion continued without interruption, while the transpiration of all other parts of her body was perfectly normal. Whilst in this state, she had only a few slight accesses of pain all the winter. Her complexion was more

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travelling, and no sooner did her pain cease a little, than she discontinued bathing, and made some little journey. I would not, however, advise any one to follow her example, though she was cured.

blooming than before, and her body had gathered a good deal of flesh.

The patient now took 27 common baths more, and several douche-baths, and now all traces of pain disappeared gradually as well as the oily cutaneous secretion, and she left Wiesbaden in excellent health.

Sixth observation.

I beg leave to add the following case, because it furnishes physicians with very interesting hints respecting the nature of the *Tic douloureux,* and makes us acquainted both with some changes of form which this disease may experience in its rise, and of such in which it may terminate.

A french lady, who had removed from Paris to St. P * *, was, without any manifest cause, affected with an extremely violent *Tic douloureux,* of which she daily had several very painful fits, occupying her left cheek, one half of her tongue, her left ear, and descending even to her throat. She was for a whole year under the care of some eminent physicians; though without success; at last they directed her to bathe her legs every day, up to her knees, in water impregnated with nitric acid, *upon which this tic douloureux soon subsided. But now she began to feel very violent pains in her thighs, which soon passed over into a state of debility and, at last into paralysis.*

These parts now were free from pain. Bathing, frictions, and all internal medicines were equally unavailing against this malady, which prompted her physicians to advise her to return to the warm regions, where she formerly had resided. On her homeward journey, she consulted, at Dresden, an eminent physician, who discovered in her features symptoms of an abdominal disorder, and, on a closer investigation of the actual nature of her complaint, he discovered a chronical irritation, or inflammation, of the liver, together with a plethoric state of the veins of her abdomen and obstinate constipation. This physician now prescribed resolvent and evacuating medicines, together with embrocations on her painful abdomen, which prevented her from holding up her body straight. Whilst these remedies were applying, the patient had copious stools of black matter, which this physician judged to be composed of veinous blood and bile, and were succeeded by a speedy emollition of the abdomen.

This treatment produced a very quick amendment; the patient's legs grew more moveable, and she could again erect herself straight. She now was sent to Wiesbaden, in order to restore the normal state of the organs of her abdomen, which in some respect might be considered to be the original seat of this anomalous gouty disorder.

Having bathed for five days, and drunk the

thermal water in the mean time, she was already able to remain for a whole hour in the bath, and to drink such a quantity of water as produced daily several liquid stools; she had, at the same time, a strong spouting-douche applied upon her back, her os sacrum and the inside of her thighs. She now began already to walk with some ease, and whoever saw her, was rejoiced at the rash progress of her amendment, when at once — *the tic douloureux, which had been dormant during the paralysis of her legs, returned with the fourteenth bath, and, as the patient thought, with greater violence than ever.*

The patient, her husband and her mother were now inconsolable; they accused the medical art and the thermal water of having recalled a complaint infinitely worse than the paralysis of her legs, and I strove in vain to convince them, that this phenomenon was only a natural momentaneous decomposition of her disorder into its elements, and that her complete recovery might now be safely looked for, as her disease was now cutting up by the roots. They now urged me to deliver her from her pain, or, at least, to endeavour to reduce it as much, as would enable the patient to proceed on her journey. I resolved, therefore, to apply a moxa behind her left ear, where the facial nerve issues from the cranium.

While the surgeon was making preparations

for this operation, and the patient looking at, she declared suddenly, her pain had left her, and she would put off the operation, until it returned. This actually happened in the subsequent night; the surgeon was sent for, he prepared to perform the operation, when the pain left her again, and the moxa was never applied. This was the last access, *which was dispelled by a moral cause*, and this is the only instance of this kind I ever have witnessed.

The patient now was enabled to continue without interruption bathing, drinking the water and having the *douche* applied; the traits of violent sufferings, which had saddened her countenance so long, disappeared now; the functions of her abdomen became regular, and she could every day walk with encreasing ease. She might have accomplished her recovery that season, had not her impatient husband, whom family concerns called away, interrupted the thermal treatment, after she had taken 26 baths.

In the summer of 1827 this lady returned to Wiesbaden. She had in the mean time got a blooming complexion. She also could walk with great ease, yet still felt some heaviness, stiffness and weakness in her legs. Having taken 25 common thermal- and several douche-baths, and drunk the mineral water of Schwalbach, she returned to Paris completely restored.

CHAPTER XIV.

Efficacy of the thermal water of Wiesbaden in paralysis from internal causes. Consequences of apoplexy.

PARALYSIS, we know, arises from numerous and various causes. Sometimes it is a disorder entirely topical, with perfect integrity of all other parts of the organism; sometimes, however, it is the consequence of more remote disorders. In all such cases the thermal waters are acknowledged to be the most powerful, and frequently the only means by which a cure can be effected. We do not know a better remedy in rheumatic and arthritic paralyses, in palsies arisen from saturnine colics, or appearing after imperfect crises in violent diseases, and in such as are of a metastatic nature, f. i. after cutaneous diseases improperly treated, *paralysis lactea* etc.

All thermal springs prove in such cases more or less beneficial, according to the greater or slighter development of their particular vital power. The thermal waters of Wiesbaden, by

Hufeland denominated *the heroes of the medical host,* may, consequently, be expected to produce the most extraordinary effects.

It is a ravishing spectacle, to see, at Wiesbaden, in the bathing season, numbers walk about with steady and firm steps, who for years had appeared to be banished from all social enjoyment, being incapable of leaving their solitary couch, and of walking without the aid of crutches.

If we wish properly to estimate the general efficacy of thermal waters in cases of paralysis, and to form an unerring prognostic in this respect, it is necessary that we should investigate the cause and intensity of the disease, as well as the importance of the affected parts. A paralysis arising from plethora will be cured with much more facility by means of the thermal water of Wiesbaden, than that which is caused by an accumulation of lymph in the brain, or in the spinal marrow. The latter commonly is as little curable by the application of thermal waters as that which arises from actual exantlation, and is attended with atrophy. There are, however, exceptions; yet it is difficult to ascertain whether these be not founded upon a diagnostic error.

The atrophy of members, arising from a curable cause, is very often removed by the healing power of our water, and we see some-

times with surprise persons that are completely emaciated, regain strength and flesh *).

Besides this healing power in palsies, common to all thermal springs, which, however, distinguishes those of Wiesbaden in an eminent degree, the latter also are specifically sanative in palsies having their seat in the abdomen.

Stagnations of the abdominal circulation, if owing to material causes, to obstructions of the bowels, to disorders of the system of the portvein, or to actual plethora, and accompanied by congestions towards the chest, the head and spinal marrow — frequently cause apoplectic fits, whose more fortunate consequences are paralysis, or a paralytic weakness, insensibility of the extremities, deafness, etc. Having in different parts of this work described the efficacy of the thermal water of Wiesbaden, I beg leave to refer the reader to them.

Stagnating hemorrhoïds, if nature stand in need of a further continuation of that secretion, begin to become fluid again, hemorrhoïdal dispositions develop themselves, or a too abundant flux and congestions cease entirely, when the material causes of the checked abdominal circulation are removed.

In such cases the external and internal use of the thermal water aid each other recipro-

*) Cases of this kind I have communicated in the first Nr. of the *Jahrbücher der Heilquellen Deutschlands.* p. 107 and 127.

cally in their efficacy, and must absolutely be employed simultaneously, and it is evident from what I have said above, that the water of Wiesbaden not only *cures* apoplexy already formed and removes its consequences, but also prevents that disease, when the alarming symptoms of it announce its approach, as will appear by the subsequent cases.

A man yet vigorous, though of an advanced age, had been affected for a long time with fluid hemorrhoïds, which, however, had ceased to flow for some years. The gradual consequences of this state were a slow digestion, together with constipation, and a sensation as if a hoop were fastened round the upper part of his abdomen. But what alarmed him more in the latter time, was a continual heaviness of his head, an incapacity of properly attending to the avocations of his calling, vertigos, and pain in the chest. He had tried different medicines without success.

Having applied for my assistance, I directed him to be cupped in the neck, immediately after his arrival, and to take half-baths for some days, apprehending that his congestions would throw themselves upon the more important intestines. He then could immerse his whole body into the bath for an hour, with encreasing comfort, and without experiencing the least inconvenience. In the morning and evening he drank the water of the scalding-spring, gra-

dually encreasing the quantity to four rhenish shoppins a day, which produced the happy effect of soon rendering his stools regular. After the application of several bloody and dry cuppings to his legs, and ten baths, he experienced a copious hemorrhoïdal evacuation, which continued for several days with a prompt decrease of all symptoms, and was succeeded by a more active digestion, a return of appetite, and regular stools, while the heaviness of his head was removed at the same time. The patient, finally, got completely well, and left Wiesbaden at the end of four weeks.

I was sent for by a Polish gentleman of distinction, in whose family hemorrhoïds were hereditary, as is the case with most Poles and Russians of high rank. With him, however, they had ceased to flow for several years, and now were superseded, especially after fits of anger, by transient palsies of individual limbs, with vertigo, and particular motions in the head. In the intervals of these precusory symptoms, he was troubled with fits of the gout.

Having precipitately retired from a very active life of business to his solitary country-seat, he denied himself the needful exercise, while his meals were highly nourishing. This mode of life did, indeed, give him a very florid appearance; but his head felt very heavy, and he now was more frequently subject to vertigo and similar morbid symptoms, than before.

A violent emotion of mind caused him at last an apoplectic fit attended with syncope, which was succeeded by a partial palsy of his tongue, and a paralysis of his whole right side. His faculty of thinking, and his memory in particular, had suffered great injury. In the first two months after this attack, some faint hopes of recovery were excited, however, the subsequent four months passed without any amendment, which obliged him to repair to Wiesbaden.

His state, at that period, was as follows: his head was dulled, his memory weakened, his ears tinkled, he was troubled with vertigo, his speech difficult, and the muscles of the right side of his body were distorted, relaxed and sunk. He could, indeed, move his right arm tolerably well; but this limb was without any strength, and almost entirely insensible. His fingers, however, were so sensible that he could not touch with them a cold or rough surface without excessive pain, altho' he wore gloves *). His right leg was affected in the same manner. He was obliged to use great exertion, when he wanted to move, on crutches, only a few steps, and he was frequently seized with a violent raking pain in all paralysed limbs, particularly in the region of the right ribs. He

*) A very promising symptom in all cases of paralysis.

was costive, though his digestion was regular, and his appetite good.

I directed him, at first, to take half-baths, and to drink a moderate quantity of thermal water. A few days after he took whole baths, in which he was able to remain about an hour. Both the irritability and stiffness of his palsied limbs encreased very much. Both dry and bloody cuppings were applied to his lower extremities, and to his neck, and when he had taken ten whole baths, his hemorrhoïds, which had been stagnant so long, began to flow. His health immediately began to mend surprisingly. His head got clearer every day, the excessive irritability of his palsied limbs subsided rapidly, and he could move them more freely. He now could bear very well hot dropping baths applied to the palsied parts, and at the end of the third week, whilst his appetite and health continued mending, he had very copious black and bloody stools, which had the most decided influence upon the mobility of his limbs. When these stools, or the discharge of blood stopped a few days, the periodical pain in his palsied side, with hemorrhoïdal colic, returned immediately, but ceased instantaneously, when he again evacuated black matter, infarctions, or pieces of clodded blood.

In the fifth week he discontinued the internal use of the thermal water, took successfully several baths composed of aromatic herbs;

I also ordered him successfully to take the *Tinct. aromatico acid,* in order to moderate the hemorrhoïdal flux, which still was very copious, and to invigorate the weakened vessels. Completely restored to health, he left Wiesbaden, after he had danced in the pump-room *(Kursaal).*

Paralyses owing to apoplectic fits caused by the cessation of a hemorrhoïdal flux, frequently do not disappear before the latter are rendered fluid again (as the above case has shown); but then the patient mends rapidly, and weakness of memory, vertigo, difficulty of speech, and other morbid symptoms, vanish, as if dispelled by enchantment, and the paralysed limbs regain mobility and a new life.

Palsies owing to nervous apoplexies, in aged and infeebled persons, or taking place after severe sufferings require long continued, nay even a repetition of bathing. Convalescence commences only very late, and *rarely takes place in the bathing season. Many weeks frequently elapse, after bathing, before the patient experiences a decisive amendment of his state.* It frequently happens that several weeks elapse, after the thermal treatment, before the patient experiences a decisive amendment of his disorder. Frequently no other advantage is gained by bathing for several weeks, and by the application of douche-baths, but a

painful sensation in the paralysed limbs, together with slight convulsions, or electrical commotions — certain symptoms of incipient amendment, though frequently slow in its progress. We frequently behold similar phenomena in diseases, in which the remedies employed began to take effect, which, as *Kämpf**) informs us, is, among others, the case, when *arnica* is given.

A lady aged 62 years, being very corpulent, but using little exercise, had in 1816, in consequence of a violent emotion of mind, a sudden stroke of apoplexy, which rendered her speechless, weakened her memory, and at the same time, was succeeded by headake, tinkling in the ears, complete paralysis, and insensibility in her right arm and leg. A short time after the fit she came to Wiesbaden, when, besides the symptoms just mentioned, no symptom of any other disease appeared. Gradually prolonging the time of bathing, she remained at last near $^3/_4$ of an hour in the bath, and had strong spouting-douches applied to the vertebral column, as well as to her palsied limbs. Having bathed four weeks, a considerable bathing-eruption ensued, and she felt pain in her palsied limbs. They regained a little more warmth, and were sometimes agitated with slight convulsions, which caused the arm or leg to move involuntarily.

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*) In his *Abhandlung von einer neuen Methode, die hartnäckigsten Krankheiten, die ihren Sitz im Unterleibe haben*, etc. *zu heilen;* second ed. p. 514.

However, the faculty of motion, properly so called, had not encreased at all in those parts, but first began to manifest itself gradually several weeks after the patient had left the bath, and, improving progressively, she was in six months able to begin to walk. After her return to Wiesbaden in the next season, her amendment proceeded in the same slow manner, though she could already speak distinctly, and amuse herself with playing at cards. Thus she frequented our baths in three successive seasons; but no progress of amendment was perceived during the bathing season. On the contrary, the incipient mobility of her limbs was each season soon impeded by an access of irritability and a feeling of heaviness and weariness, attended, however, with an encrease of vital warmth in her limbs. But after her return from Wiesbaden, the advantages resulting from the use of the thermal water began to be perceived, progressively encreasing for two or three months, when they seemed to have come to their climax, the impulse given by the bath subsiding gradually. After her third visit to Wiesbaden, the patient recovered the complete use of her limbs and speech.

Paralyses of the stomach and intestines require, besides the use of thermal springs, the additional aid of proper medicines, and of the *mineral water of Schwalbach*, which may be obtained here daily, fresh from the spring.

CHAPTER XV.

The efficacy of the thermal water of Wiesbaden in several chronical diseases of the chest.

MANY persons, even physicians formerly believed that the thermal water of Wiesbaden was injurious to all patients afflicted with disorders of the chest, and first after Ritter had cleared up this point, this prejudice was gradually abandoned, and physicians began properly to distingnish the disorders in which they are essentially useful, and those in which they are hurtful. Being, in the beginning of my medical carreer, destitute of sufficient experience to discern the groundlessness of that opinion, I had adopted it also; but was soon undeceived by older and foreign physicians, who sent to Wiesbaden patients troubled with disorders of the chest, and whom I thought it my duty to advise not to make use of our thermal water; and soon learnt to discriminate in which cases it is useful or injurious, informing myself of the views upon which the opinion of the hurt-

fulness of our springs in those disorders is founded.

It was, f. i., believed, that the water of Wiesbaden having promptly restored gouty patients', whose limbs had been contracted and useless for years, and effected what pills and essences had not been able to accomplish in years, it could not but affect and agitate the body most violently, not to mention many more erroneous ideas formed of the agency of our water, undeserving of our attention.

In many *sympathetic* disorders of the chest the waters of Wiesbaden prove eminently sanative; yet if we desire to form a correct idea of their properties we must consider the effect both of the internal and external use of them. I shall, in the first place, consider those disorders of the abdomen, which, as I have already frequently observed, so often sympathetically affect the organs of the chest. The hemorrhoïds, f. i., either while we are yet struggling against their disposition, or they are not yet periodical, frequently affect the chest. The latter is known by the denomination of hemorrhoïdal coughs, which frequently are extremely violent, and sometimes dry, but in most instances attended with a copious expectoration of either a white or a tenaceous greenish mucus, and not rarely with asthmatic complaints, nay, frequently with periodical hemophysies.

While this complaint is purely sympathetic,

the water of Wiesbaden produces the most excellent effect. The thermal vapours, in the first instance, applied to the organs of respiration serve already to calm greatly the irritation of these parts. Asthmatic persons, in general, feel themselves considerably relieved by them: they breathe with more ease, and their expectoration is discharged with less difficulty *). The internal use of the water regulates the circulation and the secretions of the abdomen, removes obstructions, and withstands the partial productive impulse, the original cause of infarctions, favours the expectoration of mucus, and commonly changes its morbid quality.

As for the effect of bathing, in cases of this nature, I have dwelt upon it in several passages of this work, to which I beg leave to refer the reader.

The water of Wiesbaden is, among others, very efficacious in complaints of the chest owing to rheumatic, arthritic and psoric metastases, while the lungs are yet free from actual suppuration.

The external and internal use of the thermal water of Wiesbaden is highly salutary in that rheumatic irritability of the passages of breath which is attended with hoarseness, fre-

*) Persons disposed to hemophysy ought to take particular care, not to enter bathing-halls filled with vapours of too great a heat, or to bathe too hot.

quently causes slight inflammations of the mucose membrane of the larynx, the glands etc., and is apt to reiterate *).

The efficacy of the thermal water of Wiesbaden in *scrofulous* complaints (if they do not appear in the shape of scrofulous ulcers, in aged cachectic individuals), has been acknowledged long since. The collar- and axillar-glands of adults frequently tumefy, in consequence of a prior disposition for this disease. Damp dwellings, rheumatical influences and other causes arising from the patient's mode of life, frequently produce the first impulse by which the dormant disposition is roused.

These glandular tumours frequently descend as far as the chest and are accompanied either by a dry or a humid cough.

According to *Portal* **), the pancreas and the glands of the mesentery frequently participate also in this disease, and we see, how by this means an unavoidable death is prepared in the most important intestines.

I have communicated in the eighth chapter of this work the cure of such a disorder, and shall subjoin here only an account of the fol-

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*) This puts me in mind of the cure of this complaint by means of the milt of herrings, communicated by Dr. *Sömmering*.

**) *A. Portal's Beobachtungen über die Natur und Behandlung der Lungenschwindsucht*, Sect. 1.

lowing case, proving the efficacy of the water of Wiesbaden in complaints of this kind.

Mr. N. had from his childhood to struggle with several disorders of the lymphatic system, particularly with rickets *(rhachitis)*, which produced a considerable curvature of the vertebral spine. His whole body exhibited traces of this disorder. Having attained the years of puberty, disorders of the bronchial- and collar-glands made their appearance. Cough, asthma, accompanied by hoarseness and an extraordinary secretion of mucus followed. The maxillary glands tumefied very much.

Having struggled for many years with these disorders, Mr. N. got well, and became an active man of business. In the latter end of the winter of 1816 he was infected with a syphilitic disorder, whose consequences were condylomena and buboes, together with slight tumefactions of the maxillary and parodid glands, cough, hoarseness and asthma.

After a treatment with mercurials, cicuta, etc., while salivation was carefully avoided, the condylomena, as well as the small ulcers that had superseded them, disappeared. But now considerable disorders of the glands began to develop themselves. Although he had not salivated, yet the lower maxillary glands swelled very much, the inguinal glands became enlarged; a dry cough, stitches in the chest with dryness, and pains in the throat, followed by a green,

suspicious expectoration, ensued. The general state of his body did not appear to suffer in proportion. Antimonials, cicuta, dulcamara, gujacum, muriate of barytes, were administered till the spring of 1817, though with little success. He repaired at last to Wiesbaden. Having carefully examined his state, I could not but agree in opinion with his regular physician, who was inclined to believe this disease to be a return of his former scrofulous disorder, revived by the impulse of syphilitic infection.

After the patient had befriended himself with the first impression made by the bath, he immersed himself up to his neck into the water, remaining in it $^3/_4$—$^5/_4$ of an hour, and drank from three to four shoppins of water from the *Schützenhof* in the morning and evening.

Having continued this method for eight days, his cough had already grown much milder, and the expectoration of greenish, vitreous matter uncommonly abundant. At the same time the tumefaction of the collar-glands fell rapidly, and when he had bathed and drunk the thermal water for six weeks, they had regained their normal form, while the expectoration decreased proportionably. In the mean time it occasionally ceased entirely for whole days, while he was taking bitter and gelatinous medicines, but afterwards returned in an alarming manner; and it now appeared that a small abscess had formed itself in his lungs, which

still exists, after the lapse of five years, though without any detriment to his general health, which is excellent.

The swelling in the groin decreased less rapidly, probably, because no contiguous secretory organ could receive the critical discharge. These tumours disappeared gradually only some time after his return from the bath.

Ritter relates *) several cases of pulmonary phthisic cured by the use of the thermal water of Wiesbaden. His account of the first case is too important, to be omitted here. I shall, therefore, subjoin a brief extract from it.

The wife of a forester, about thirty odd years old, after her lying in, was seized with a tertian ague, obstinately resisting the best endeavours of her physician for 29 weeks. Against the end of his treatment of her, he had given her large doses of peruvian bark, which had caused her an oppression and tension in the epigastric region, a tumefaction of the abdomen, a dull headake, and, at last, an intolerable anxiety and a difficulty of breathing, accompanied by fever. Her ague continued in the mean time. The patient, getting tired of taking medicine, now abandoned herself to the operation of nature, and in three weeks was delivered from her ague. Her cough, however, encreased,

*) *Journal der practischen Heilkunde*, Bd. 7. 3es *Stück*, 1799.

and by its violence made her spit blood. Some time after she discharged a mucous and purulent matter, accompanied by fever, nocturnal sweats, emaciation etc.

The patient, given up by all her friends, resolved to repair to Wiesbaden, in the firm hope of recovering her health there. Mr. *Ritter*, being consulted, thought himself justified in dissuading her from it, as she exhibited the whole character of a complete pulmonary phthisic. The patient, however, could not be diverted from her purpose. When arrived here, she took, with great circumspection, a tepid bath of 91° Fahr., remaining in it 20 minutes. She breathed more freely in the water; her pulse fell from 126 to 119 pulsations. After this first bath, she slept better, perspired less copiously, and coughed with greater ease. This amendment was progressive for some days, while she remained in the bath 30—40 minutes. Her complexion changed, the exacerbation she used to experience in the evening, abated considerably, and she coughed less frequently at night. Her pulse never rose higher than to 103—106 pulsations. Her expectoration continued to be purulent. Thus she gradually remained in the bath for five quarters of an hour.

On the tenth day symptoms of an impending hemoptisy were suddenly perceived, which required venesection of the arm and an antiphlogistic treatment. By this means the threat-

ening danger was promptly averted, and the patient confidently recommenced bathing on the fourth day. Her amendment now proceeded so rapidly, that the fever and the nocturnal sweats disappeared, while her sleep was troubled by coughing only against morning. Her expectorations lost their purulent appearance, were discharged with greater facility, and seemed to consist only of mucus. Her appetite, spirits, nay even her florid complexion returned so rapidly, that in the course of ten days she was strikingly altered. In the fifth week she returned to her family, as completely restored as it rarely happens. Her cough had left her entirely*).

Mr. *Ritter* mentions, in the same place, two more ladies afflicted with chronical pulmonary pthisic, who derived great benefit from our thermal water. One of them was completely cured of her cough; and the other was troubled with it only by nocturnal fits. Her fever had abated so much, that it could scarcely be perceived, while she was visibly recovering a good appetite, a healthy complexion, strength and flesh.

Highly as I esteem Mr. *Ritter* as a physician and author, and valuable as I deem his practical observations, yet I should not venture

*) This lady lived nine years longer, when she died of a phthisic of the larynx. I could not learn what was the cause of it. *Thilenius* treated her in this last disease. P.

to advise the baths of Wiesbaden in cases of confirmed pulmonary consumptions. This subject, however, has not as yet been cleared up sufficiently, and what I myself have experienced in this respect, allows me to attest the efficacy of our thermal water in the diseases quoted above, namely, in inveterate disorders of the chest, owing to metastases, or to a rheumatic cause, not attended with suppuration of the lungs, whether they appear in the shape of a chronical catarrh, or that of an asthma, and experience authorises me to declare, that in actual suppurations of that organ, to whatever cause it may be owing, the water of Wiesbaden is hurtful, but that it is a chimera, when it is pretended that it was detrimental to a chest merely weak.

CHAPTER XVI.

Efficacy of the water of Wiesbaden in some diseases of the female sex.

It is an observation deserving to be regarded, that several diseases of the female sex occur more frequently in our time, and by combining with each other finally prove completely destructive to health. Many of these diseases, to which the fair sex formerly was liable only after difficult deliveries, or at an advanced age, now attack even young women, and poison the very sources of their life. Such is the consequence of an erroneous physical and moral education, in our age.

Thermal waters ever were considered very important remedies in all these diseases, and esteemed powerful restorers of decaying health. But if we desire to gain this end, our choice of the proper mineral spring must be founded upon a correct knowledge of its peculiar sanative virtue.

The *courses* of women are liable to a variety of disorders, and their numerous anoma-

lies find the best and most powerful remedy in our thermal water.

Abdominal plethora, a hereditary hemorrhoïdal disposition, frequently choose the sexual organs for the formation of a regular hemorrhoïdal flux, which most generally coincides with the monthly course. When the disease appears in so simple a form, the immediate consequences are not very alarming, and mostly restrict themselves to violent pains in the back and of the abdomen, resembling those of a woman in labour. They are the forerunners of a copious menstruation.

Tepid domestic baths, the thermal water of Wiesbaden, drunk in spring and autumn, according to *Lentin's* direction *), and, what is indispensable, a change of regimen, if it appear to be the original cause of the disorder, frequently deliver a great many females from these inconveniences, whilst others are necessitated to repair for relief to Wiesbaden even in this stage of the disease **).

But when this state already alternates with arthritis, or difficulty of digestion and the symptoms of obstructions and infarctions accede, the volume of the matrix is enlarged, frequent spasms

*) S. Ch. IX.

**) Frequently it is not owing to the inefficacy of the medicines taken at home, that renders diseases incurable there, but to domestic relations, moral and various other causes of a local nature.

and a sense of heaviness are felt in the region of the pubis; if, at the same time, the courses (or the hemorrhoïdal flux) are irregular, sometimes too sparing, and then again too copious, we have to apprehend very unpleasant consequences. If, finally, the excrements vary in their composition *(Leucorrhoea infarctuosa)*, and the irritability of the sexual organs is affected more or less, if such a conflux of morbid symptoms takes place, the patient is on the eve of a period of very painful sufferings, if powerful aid be not procured without loss of time.

The thermal water of Wiesbaden, both drunk and injected into the matrix, and used for bathing, is in such a case extremely efficacious, and many sufferers of this class find complete relief here every season.

But if the disorder be allowed to make greater progress, the matrix suffered to become the sole depository of the arthritic and hemorrhoïdal evolution and this important organ of the female body be disturbed more and more in its vitality, operations of pseudoplasticity are called forth, the uterus no longer suffers only momentaneously, but its substance is materially altered, tumefactions ensue, the organ grows schirrhous, and the most dreadful of all diseases, a cancer of that organ, is the final consequence.

The latter disease advances in its development by many intermediate stages, which fre-

quently are involved in very doubtful obscurity, that renders it very difficult exactly to ascertain, what progress it has actually made. I shall not, therefore, presume to state here, to what stage of this disease the efficacy of the thermal water of Wiesbaden is confined.

The celebrated Dr. *Hufeland* reports the following fact: „The first acquaintance," he says, „I made with Wiesbaden thirty years ago, and which inspired me with a lasting confidence in the efficacy of its thermal water, was owing to a lady who was troubled with a *fluor albus* of long standing, attended with an incipient schirrosity of the uterus. She derived so much relief from it, after a repeated use of that bath, that her life was prolonged for many years*), and she escaped the danger of a cancer of the matrix, that threatened her."

I never saw a declared virulent schirrus cured here — though I obtained in many cases of this kind a great abatement of very painful accessory symptoms, attending that disorder, nay, frequently lasting relief, decidedly prolonging the life of the sufferer.

There is, however, a stage of this disease, in which *the thermal water of Wiesbaden is injurious.* The external and internal use of the water, f. i., powerfully excite nature to re-

*) Dr. *Hufeland* has informed me that this lady survived her return from Wiesbaden above ten years.

move the morbid state; but this excitation is always attended with a reaction. Now, when the general state of the body is undermined so much as to verge to that of a hectic fever, or has passed over already to that of consumption, the water of Wiesbaden cannot but accelerate the dissolution; for the excited reaction is a powerful auxiliary of nature.

When the disorder has reached that hight, and the vital power is sunk so low, a change of the morbid state is impossible; hence the provoked, or encreased, hectic fever must necessarily accelerate the general consumption. This rule respecting the use of thermal waters is applicable in many organic diseases, that have reached their climax.

The following case, which I have observed for nearly ten years, proves that the water of Wiesbaden in these serious disorders may afford some relief, even when all hope of recovery has disappeared long since.

A lady aged 69 years, of W. applied to me for advice for the first time, in the autumn of 1811. She was very vigorous for her age, though her whole life had been an uninterrupted series of heavy bodily and mental sufferings. Married when very young, she became the mother of several children, and very soon she perceived violent symptoms of a gouty and hemorrhoïdal disposition, hereditary in her family, and had to struggle with these disorders

to a very advanced age. She was completely regardless of the care her physical state demanded, her whole life being devoted to the laudable exertion to relieve the sufferings of others. Hence she could not expect a radical cure of her disorders, whilst it was yet possible, though she consulted many physicians, and visited many baths. She had struggled for more than half a century with hemorrhoïdal sufferings and all their anomalies. Sometimes they were regular for years; sometimes they appeared in the shape of hemorrhoïds of the bladder, accompanied by an inflammation of that organ and an alarming retention of urine, frequently requiring surgical aid; sometimes they also produced mucous fluxes of the bladder and the sexual organs, flowing almost continually. The patient, besides, was subject to the most severe fits of the gout, during which the affections of the matrix were calmed. The articulations of her hands and feet were deformed and covered with large gouty tumours.

In her fortieth year she was infected by her dissolute husband with a gonorrhea, probably syphilitic, which proved the cause of severe sufferings, and gave rise to a white flux *(fluor albus)* of a strong smell, encreasing incessantly as she advanced in age, and so corrosive as to destroy the softer parts. At a later period this excretion assumed the character of ichor, and was frequently mixed with blood.

This lady came to Wiesbaden in 1810, when Mr. *M. G. Thilenius* directed her cure. I may conclude from the prescriptions of this excellent physician, that he already suspected the existence of an incipient cancer of the matrix. He, at the same time, paid proper attention to the state of her abdomen, which evidently was the original seat of her gout and hemorrhoïdal anomalies. She obtained considerable relief, but (probably owing to her regimen) never recovered her health completely, though she frequented our baths for five or six weeks every season, until death terminated her sufferings.

Her sufferings were aggravated by the access of gout in the head, when, in 1811, she consulted me for the first time. Her uterus was decidedly schirrous and there was just reason for suspecting the existence of additional desorganisations of the contiguous parts, since they had undoubtedly been, for a long run of years, the focus of numerous morbid developments and specific metastases.

A fetid acrimonious leucorrhea encreased daily accompanied by constipation, an ardent urine, which, at a later period (in 1814) was superseded by a pungent and throbbing pain in the vagina, after each evacuation. She experienced, at the same time, deep in the abdomen, a troublesome sensation of heaviness, as if her matrix were going to disengage itself. Until

the year 1816 she frequently had violent accesses of articular gout and herpetic cutaneous eruptions, which returned continually, as the patient could not be dissuaded from going out thinly dressed in all weathers.

Though she took very little nourishment, and slept as little at night, her body, considering her age, was, even to the time of her death, uncommonly vigorous and fleshy. While she was in this state, the bath agreed with her uncommonly well, and I was obliged to leave the use of it entirely to her instinct. No sooner did morning dawn, than she descended already into the bath, frequently remaining in it 1½ hour, and longer. In the evening she frequently bathed a second time; and, besides, made use of clysters of thermal water and of injections of it into the matrix. The greater part of the intermediate time she spent in the open air. The influence of these means rendered the white flux milder, and in the first years her pains intermitted for several weeks, and longer, and their return was generally occasioned by external causes; neither could they be expected to cease altogether, considering her improper regimen. Her stools became regular, and continued so for months, after she had left Wiesbaden.

The gradual progress of her disease proved, however, continually more evidently, that the thermal water would not get the better of it.

The white flux was frequently mixed with filamentous matter, and continually assumed more distinctly the appearance of ichor. The most violent pains, descending to her very thighs, did never quit her entirely, tormenting her even in the bath. The consecutive effect of the thermal water did not continue long, and against the end of autumn she was obliged to have recourse to domestic baths infused with the leaves of hyosciamus.

None of the various medicaments administered for the purpose of reducing the violence of the pains she was suffering, proved more serviceable than a mixture of *Extr. conii mac.* and *aq. laurocerasi;* however, in the latter period of her disease, this remedy too afforded very little relief.

In 1817 and later she was subject to frequent hemorrhages from the matrix; she continued, however, nevertheless, her annual visits of our baths, though a journey of 36 leagues aggravated her pains very much; and, what is remarkable, I did not observe one hemorrhage, while she was bathing here, but only hemorrhoïds, by the common passage.

From that year the accesses of gout were less frequent and painful — the dreadful disease of the matrix absorbing, as it were, all other sufferings.

In the month of Apr. 1820 she again bespoke apartments for the ensuing May; but I

was soon after informed, that she was no more able to sit up, much less to bear riding in a carriage, that leucorrhea and the loss of blood did not cease for a moment, that her body began to swell, and that the hectic fever had not intermitted for several months. Repeated accesses of apoplexy at length terminated her painful existence in the month of June of the same year, in the 78th year of her life.

Painful and retarded courses, announcing their approach by colic, spasms of the bladder and vomiting, may be cured at Wiesbaden, if they be originally owing to obstructions in the abdominal intestines, the matrix, or to stagnation in the system of the portvein, or to a defective energy of the uterine system. Hence, we see, that the thermal water of Wiesbaden is very efficacious, when the courses begin to disappear, and the above mentioned phenomena are connected with hemorrhoïdal and gouty sufferings. The external and internal use of the mineral water must, however, be recurred to simultaneously, if the patient is to derive any benefit from it.

The causes mentioned already, also frequently occasion a considerable derangement in the periodical course, *as well as to the time of its appearance, as to the quality of the excretion;* nothing is more conducive, in that case, to regulate these functions, than the water

of Wiesbaden, administered as baths, drink, injections and douches.

The cure of *such* complaints is chiefly owing to the *specific* efficacy of our thermal water, which renders it peculiarly preferable; but it also proves highly efficacious in other disorders proceeding from the courses, and which may be cured by means of *any* thermal water. f. i. in painful menstruations, caused by an excessive irritability of the nervous system, accompanied by hysterics and various spasms; to this class also belong menstrual colics, arising from too tardy a development of the body, or of some individual parts of it, or from too feeble or sparing courses in robust females.

The courses are frequently disturbed or suppressed by rheumatic influences, emotions of the mind, alterative medicines etc. I have seen remarkable nervous disorders, owing to this cause, disappear in a short time, while the natural period of menstruation was recalled by means of the thermal water.

To this class belong, farther, a variety of sympathetic states, developing themselves by a derangement of this important function in the female sex. A woman 44 years old, had, from the period of puberty, in her left breast a tubercle, situated quite low, and, at first, perfectly insensible, even when giving suck to her children. But for some years past the body of this woman began to gain an uncommon deal

of flesh, whilst, at the same time, her courses ceased to be regular, and began to flow more rarely and sparingly. Now the tubercle in her breast became painful; the patient felt sometimes, previously to the setting in of, and during her courses, a burning pain, at one time more, and at another less painful, accompanied, sometimes, by transient stitches; the tubercle seemed to be growing larger, and excited just apprehensions.

The patient, being extremely alarmed, especially as her mother had just then died of a cancer in her breast, went to Wiesbaden. She bathed, and drank the thermal water for four weeks, without experiencing any considerable change during her stay in our town. However, the immediate consequences of the use she had made of our mineral water, were very remarkable; for since that period (it is now three years), her courses are regular and copious, the alarming irritations in her chest have ceased, and her body has not grown more corpulent *).

It is not improbable that the erethism in her chest will return after a few years, when nature shall labour to bring about a cessation of her courses, and, in the place of this excretion, the generative faculty be superseded by

*) This lady is at present, after the lapse of 11 years, enjoying the best state of health. Her courses have ceased since, without having excited erethism in her chest.

that of plasticity, and promote the formation of fat and flesh. It is, however, as probable that a repeated use of the thermal water of Wiesbaden will recall the monthly courses, so indispensable to this robust lady for a longer term of years, and arrest the progress of this plastic power, until that period of life, when the operations of nature are reduced to a state of tranquil equilibrium.

We observe among the anomalies of the menstrual period cases that are characterised by atony of the matrix, tumefaction of that organ, *fluor albus,* by great weakness, and a disposition to a cachectic state. The favourable site of Wiesbaden, in the neighbourhood of the most excellent mineral springs, viz. Schwalbach, Geilnau, Fachingen and Selters, affords the most desirable aids, and facilitates the requisite combination of vivifying baths with the internal use of those mineral waters that powerfully raise the languid powers of the body, and which may be successively prescribed, according to the state of the disease.

But when the courses are suppressed, and cachexy or chlorosis exist already in an advanced state, or symptoms of incipient dropsy make their appearance, the *water of Wiesbaden is hurtful,* and such patients may expect to derive benefit from the use of chalybeate waters, only when their disease does not originate in an organic defect.

The fair sex become daily more frequently liable to *leucorrheas*. Though the sanative power of mineral waters is very great in this disease, they may prove very pernicious, if chosen without proper regard to the constitution of the patient and the original cause of her disease.

The privy counsellor *Fenner of Fenneberg* has so correctly defined the extent and limits of the sanative power of the water of Wiesbaden, that I do not hesitate to repeat, on this occasion, his own words respecting this subject:

„The water of Wiesbaden," he says *), „cures the white flux:

1) when it is the consequence of an interruption of the cutaneous functions;

2) when it is the consequence of the suppression of morbid secretions and excretions, of the hemorrhoïdal flux, of the itch, of tetters, ulcers or sweating of the feet, a. s. f.;

3) when it arises from obstructions in the abdominal intestines, especially in the matrix;

4) when it is of a scrofulous, rheumatic, or arthritic nature, in which cases it bears the character of a symptomatic, or actually metastatic, disease."

*) *Manuel* etc. *Darmstadt*, 1816.

Drinking the thermal water, bathing in it, injections of it are in these cases equally efficacious, and patients should not suffer themselves to be intimidated if the discharge should be more copious, in the beginning, than it used to be, as it almost generally precedes a favourable crisis through the medium of the relaxed glands of the vagina, whose return to their natural state is the more likely to succeed this artificial state of irritation.

But the white flux is more rarely cured by the water of Wiesbaden, when it is the consequence of an absolute weakness of the matrix, and attended with a cachectic diathesis *).

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*) The thermal water of Wiesbaden, nevertheless, frequently produces excellent effects, when tonic and martial medicines are combined with it. Mr. Ritter quotes the case of a woman, above 60 years of age, who was affected with a white flux of a very malignant character, combined with a total inability of retaining her urine, and a hectic fever. She was soon completely cured by using our thermal water, which she had injected cold, drinking, at the same time, the mineral water of Schwalbach, aided by tonics.

Out of 27 females affected with the white flux, 16 were radically cured here, and 11 of these owed their recovery *only* to our mineral water, while five required the concomitant aid of tonics (iron and alum).

Seven out of these 27 received great benefit from our baths, but the remaining four perceived scarcely the slightest symptoms of amendment, and left Wiesbaden in a very hopeless state. It is not

Neither does it cure this disease, when it has been produced and is continued by frequent pregnancies, difficult deliveries, or a prolapsion of the enfeebled vagina *). In such cases ferruginous waters only can afford effectual relief.

The thermal waters undoubtedly possess the virtue of curing the sterility of women, if it be owing to *a general dynamic difference* of the systems of the animal economy, as we perceive by the exposition of the manner in which these waters act (if taken as general tepid baths).

The efficacy of the water of Wiesbaden is very powerful in these dynamic disorders, which, in the shape of depressed vitality, arise from a nervous action, either excessive or too feeble *(consumptio hysterica)*. This state frequently manifests itself in the functions of the sexual system, not owing to an actual exantlation of the vital power. In cases of this kind sterility is owing either to a deficient or an excessive irritability of those organs. Such a state particularly requires the bath of Wiesbaden, and every physician, how limited soever his practice

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mentioned that Mr. *Ritter* has observed the latter four females sometime *after* they had discontinued the use of the bath, when the patient frequently recovers.

Journal der praetischen Heilkunde. Bd. 20, *St.* 3, *S.* 130—135.

*) *L. cit.*

may be, will have had occasion to effect a radical cure of this disorder, in the first stage of its development, either through the medium of common tepid baths, or the addition of aromatic herbs. But when this disorder has already made some progress, domestic bathing must be superseded by thermal baths, whose efficacy may be encreased by powerful douches, when there exists an atony of the matrix. The martial water of Schwalbach must, then, form the secondary cure, if it be found necessary. Should a general state of cachexy have already *advanced too far*, it will be necessary that it should be removed first, if the thermal water is to afford relief.

I shall not dwell more largely on the *general* sanative virtues of the thermal water of Wiesbaden, and now proceed to treat of those local affections by which sterility frequently is occasioned, and which may be cured by means of the thermal water of Wiesbaden.

To this class principally belong, gout, hemorrhoïds, in their various forms, infarctions, leucorrhoeas and spasms arising from this source. Farther, atony of the uterus in bodies otherwise robust, swelling of that organ, and schirrosity of the vaginal glands.

„I recollect the instance of a female," says the author quoted above *), „who, being severely

*) *Taschenbuch für Bäder und Gesundbrunnen auf das Jahr* 1816.

afflicted with tophaceous gout, lived for several years in a state of sterile matrimony. The baths of Wiesbaden delivered her from the gout, and she has been delivered since of several children."

I myself have observed many cases, in which the thermal water of Wiesbaden has triumphed over sterility; it would, however, be neither instructive, nor interesting, if I were to report them here, as the observer may not presume to impute the successfull result, wished for so long, solely to the mineral spring, considering that powerful influences, both physical and moral, are inseparable from a residence at a bathing-place. I shall, therefore, communicate the following case only, in which, I presume, the recovery of the patient was exclusively owing to the virtue of the thermal water. Some years ago I had under my care the respectable consort of a clergyman, who had been afflicted for a long time with spasms attacking by turns her head, abdomen, chest, or some other external part of her body, especially on the left side. Her nerves were, at the same time, very irritable. The spasms had declared themselves gradually while she was suckling her last child, perhaps too long for her irritable, though well-fed, body. I proposed to her to make a trial of the mineral water of Wiesbaden, to which she agreed reluctantly, being disinclined to be

separated for three weeks from her children and grandchildren. The physical influences were, consequently, far from insuring a successful result. Her spasms had, indeed, relaxed a little since her departure from here, and she enjoyed several days free from pain; but she was not yet cured completely. Immediately after her return from the bath, she got pregnant, and in her 48th year was delivered of a weakly male child. Her spasms had discontinued already after the first months of her pregnancy, and never returned afterwards.

Ritter, on this occasion, makes the following observations on the virtues of our thermal springs:

„I shall only touch upon their *specific efficacy* in female sterility, when the disorder is not absolutely incurable. Earlier physicians, and amongst these *Kämpf* in particular, believed already firmly in it, justified by experience. I have already experienced several instances of absolute sterility being cured merely by means of our thermal water, with the exclusion of all other remedies, in females, who, in all other respects were perfectly healthy, both in such as laboured under absolute sterility, and in such as had remained sterile ten or twelve years after their last delivery, and found themselves pregnant in a month after their departure from our wells."

Of other disorders, partly secondary, and partly sympathetic, f. i. of the consequences of many lyings-in, I shall make no farther mention here, it being known to all physicians that they are curable either by the use of thermal waters in general, or by that of ferruginous springs.

CHAPTER XVII.

Remarks on the spring of the Schützenhof *(archers' court), illustrated by a series of interesting practical observations.*

WIESBADEN possesses, as observed in a former place, a great number of, partly, very efficacious hot wells, considerably differing from each other, both as to their respective individual component parts, and their temperature. However, it appears to be ascertained, as far as chymical analysis has enabled us hitherto to inquire into their composition, that this difference consists only in the quantity, but not in the *quality* of their constituent parts. The difference of temperature between the hottest and the coolest spring amounts to 18° R. Such a difference is very desirable at a place like Wiesbaden, so eminent for the efficacy of its springs; for we may be persuaded that the quality and quantity of the components, the manner in which the latter are combined, and, finally, the degree of heat itself, the main condition, and, in some measure, the

very soul *) of that union, form the mode and degree of the particular efficacy of a thermal spring, and that these qualities determine the degree of the reaction which the organism experiences from the use of the mineral water. For this reason we continually meet with patients, for whom the use of mineral water would be proper, in general, but whose constitution may have been rendered so delicate by their disorder, as either not to be able to bear at all the reaction produced by the mineral water, or to be confined to a very limited use of it. A thermal spring of less heat and a smaller quantity of components, affords here a desirable medium, and the patient will not only bear it better, but also be cured.

The spring of the *Schützenhof* had already in the remotest ages the reputation of being the mildest and most calming of our wells, and of causing the smallest degree of reaction **).

As to the principles of chymistry, this water, as well as that of the other springs, contains neither an acid, nor a free basis. With

*) For we observe that the escape of caloric is followed by a decomposition of the thermal water.

**) This spring affords incontestable proofs of its having been resorted to by the Romans; for we find there seven large roman baths, finely ornamented, together with very remarkable votive tables, one of which is put up in the large bathing-hall of this house.

regard to its fixed particles, it is, f. i., inferior to those of the *Kochbrunnen* (scalding well) and of the *Adlerquelle* (spring of the eagle); nature, however, has provided it with a smaller quantity of such components, as are more difficult of digestion, such as silicate of alumine, alumina, magnesia and lime. It contains less iron than the *Kochbrunnen,* and when examined with an infusion of galls, a fine purple colour appears, from which professor *Kastner* thinks himself justified to conclude, that that metal exists in that spring only as a light oxidule. Its temperature is 38° R.

To this chymical individuality it is owing that the water of this spring is more easily digested than that of the other wells, and that even tender valetudinarian children may drink it, without experiencing the least inconvenience. Nevertheless, I have not found that its resolvent power is inferior to that of other springs, nay, several individuals afforded me opportunities to observe, that it excites the intestinal secretions more powerfully than even the *Kochbrunnen;* a phenomenon, which perhaps is owing to a less degree of oxydation of the iron it contains, which, as it is well known, favours or arrests, more or less, the abdominal secretions in many patients *).

*) This phenomenon, which always occurs only as an exception, is not, however, confirmed by all

The water of the spring of the *Schützenhof*, administered in severe disorders, causes much more rarely manifestly general reactions in the organism, than that of any other spring of this place; I have, besides, observed, during and after its use, the same critical evacuations of which I have made mention in a former chapter.

There are, without doubt, torpid constitutions, and diseases, that may require the strongest excitation, if the vital activity of the body is to be roused, for whom the alterant operation of the thermal water, used as a bath, cannot be too powerful. To this class belong, f. i. inveterate glandular tumours, tumefactions of the articulations, inveterate gouty palsies, and crooked limbs owing to the same cause, various cutaneous and metastatic disorders etc. The majority of patients, however, do not stand in need of that strong excitation, to be cured, and the mild spring of the *Schützenhof* proves, how erroneously it is maintained that only such springs are really efficacious, as produce a manifestly violent excitation.

I frequently had occasion to observe, that patients who could not bear any other of our springs, were completely restored by the water of *Schützenhof*.

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individuals. The water of the *Kochbrunnen* regularly purges more copiously.

It is an undoubted fact, that these baths produce a sensation of beneficent calmness even in patients, whose constitution is of the most delicate kind, and whose nervous system is highly irritable — no matter whether the latter state be owing to material enfeebling causes, or resulting from psychical or physical sufferings. I have prescribed them with great success in slight febrile affections, when the waters of Wiesbaden, in general, were indicated. We may, therefore, when we, apprehending to excite the patient too much, are obliged to recommand drinking the thermal water, without bathing, or to bathe only rarely, very safely direct our patients to make use of the water of the *Schützenhof* in both forms; which is an advantage highly important to the sufferer, in as much as it considerably shortens the duration of the cure, or renders a repetition of it in the next season unnecessary. Thus I have with great success prescribed the water of this spring in general hysterical sufferings, in hysterical aphony, and to hypochondriacs whose strength was completely spent.

This spring deserves, farther, the most decided preference, when we, on account of an excessive irritability of the organs of the chest, hesitate to make use of any other of the springs of Wiesbaden.

I always saw our thermal water employed with surprising success, both with children

and adults, in tumefactions of the glands of the mesentery (whilst they were not painful, in which case the waters of Wiesbaden are not to be recommanded), in ulcers of the glands and bones. There are, however, many children, whose general constitution is already too much impaired by this disease, and who betray symptoms of a slight fever. In such cases the strong springs of Wiesbaden may not be resorted to without risk of provoking too violent an irritation, and here the water of the *Schützenhof* satisfies all the demands of the medical art, and, being employed both externally and internally, frequently produces the most extraordinary results, which almost might be pronounced miraculous.

In such cases, which frequently seemed to be completely hopeless, especially when the tumour of the glands of the neck extended into the chest, and cough, attended with general emaciation, existed already, I prescribed with great success snail-broth, and, in autumn, I directed my patients to eat ripe grapes, for which the vineyard attached to that bathing-house, afforded a very convenient opportunity.

I presume I may here pass over in silence those, frequently very inveterate, syphilitic and mercurial diseases, under which the organism threatens to sink, as well as other disorders of delicate persons, because every intelligent physician, after what I have said, will be able to judge

what patients he may safely refer to this spring.

I beg leave, only to subjoin a few practical observations, that, without doubt, will prove interesting to every reflecting physician, and convince my colleagues that very serious diseases are susceptible of being cured by these thermal waters, notwithstanding the alarming progress they have made.

I.

Affection of the liver, complicated with jaundice, aphony, paralysis of the upper and lower extremities, hectic fever, extreme weakness, and emaciation.

Mr. G., director of the seminary at D**, was from his earliest youth affected with a scurf, mostly occupying the hairy part of his head. The use of snuff did, indeed, make it disappear, but it invariably returned, when he attempted to discontinue that practice.

In 1810, when he was 44 years old, he was suddenly seized, without any manifest cause, with a violent cardialgy, attended with jaundice; — phenomena, that yielded only to a change of air, but returned the next year, when they were accompanied by an inflammation of the liver and a nervous fever.

Until the year 1819 he had three accesses of the same kind, and in the intermediate pe-

riods was tormented with melancholy. The last access was attended with violent pains in his hands and feet, leaving behind, for the first time, a paralytic lameness in these limbs. The baths of *Gastein* afforded him some relief, and, after he had left them for some time, he could again freely move his hands and feet. However, in the same year new disorders made their appearance, and he was seized with an inflammatory pulmonary catarrh, which was succeded by a complete aphony and extreme weakness. He grew more emaciated day after day, and it is probable, that, from that period, he never was without a hectic fever. Gradually he again lost the use of his limbs.

New accesses of cardialgy prompted his physician to take the hazardous resolution of sending his patient, whose case was almost desperate, to our baths, about 80 leagues distant from his usual residence. He arrived here July 17, 1820.

On my first visit I found him in bed, seized with a continual fever, attended with violent thirst. He could utter only a few hoarse sounds, that rarely were intelligible to me. At the same time he coughed frequently, had alarming expectorations, and perspired copiously against morning. His eyes and the skin of his whole body were yellow, his abdomen was hard and tense, his stools were irregular and of a grey

line, his appetite was indifferent; sleep was wanting, and his body extremely emaciated.

He could move but very slightly his left arm; but his right, as well as his hands and fingers were completely immoveable. His legs were likewise paralysed, and he could just support himself, when raised upon his legs.

Considering the aphony and excessive weakness of the patient, I found it necessary to allow him a few days rest, in order to obtain a correct insight into the nature of these phenomena. I was angry with his physician for having sent his hopeless patient to Wiesbaden, especially as he had not provided him with an account of the rise and progress of his disease.

The physiological development of this disease evidently required that a particular attention should be paid to the psoric acrimony of the humours and a great susceptibility of the cutaneous system for rheumatic influences, partly arising from the former, and partly favouring it. It is evident that the affection of his liver, his cardialgy, jaundice, the paralysis of his limbs and his aphony were directly or indirectly connected with that psoric metamorphosis; there was, however, very little hope of saving him.

I made him drink, at first, some cups of the water of *Schützenhof*, in the morning, which procured him some stools and mended his appetite a little. On the third day after his ar-

rival he took, for a quarter of an hour, a mineral bath infused with aromatic herbs, upon which he slept better and perspired less profusely against morning. He now prolonged his baths cautiously to 40 minutes, and drank from eight to ten ounces, each time, of the water of *Schützenhof,* every morning and evening. The result of this treatment was really astonishing; copious, though regularly formed, stools ensued, the hardness of his abdomen disappeared, his appetite was excellent, and deglutition easy. After eight baths he could already walk about his apartment; his strength had been raised considerably, and he could articulate again pretty intelligibly.

After the twelfth bath his upper extremities began to grow moveable His baths now were prepared of pure thermal water, and a strong douche-jet was thrown upon the palsied parts of his body, and upon the whole dorsal spine. Only the yellow hue of his skin remained obstinate, and, together with other symptoms, indicated material obstructions in the abdominal vessels, which probably were retained by spasms; this induced me to give him pills composed of rhubarb, assafoetida etc., which made him evacuate a quantity of black stuff, while his general health continued to improve progressively. These evacuations continued ten days, when they resumed a natural colour, while his com-

plexion grew clearer and more animated from day to day.

At the end of a fortnight, he was able to walk in the garden, and in the fourth week he had gathered strength enough, to enable him to climb up a hill.

His quick pulse did not grow calmer before the middle of his treatment, and when he left Wiesbaden, his pulsation had become perfectly regular in every respect.

He left us on the last day of August, blessed with renovated vigour, which enabled him to compose a latin ode of thanksgiving. His voice was manly and strong, and he felt perfectly well. I directed him to drink the water of *Schwalbach*, and to eat ripe grapes.

He enjoyed a good state of health all the winter — but against spring his feet were covered with tetters, which obliged him to revisit our baths the two following seasons. During his last visit I directed him to drink the water of the *Kochbrunnen*, and to take mud-baths.

II.

Account of the case of a person poisoned with arsenic, who was cured of the dreadful consequences of it by means of our thermal water.

For the communication of the following highly remarkable case I am indebted to the complaisance of an excellent physician, whose

name I must reluctantly conceal for reasons, which may easily be gathered from the account itself. In my relation of it I shall make use of his own words, allowing myself only a few trifling abridgements required by the nature of the present work. I was consulted by the patient at Wiesbaden.

„Wilhelmina N., the daughter of a very worthy functionary, was of a very lively temper, a very graceful and vigorous person, and possessed an engaging physiognomy. She had enjoyed an excellent state of health until her nineteenth year (Sept. 182*). About that period her courses had stopped for two months, which made her apprehend, as she could not find out another cause, that it might be the consequence of her connexion with a lover, whom her parents did not approve of. This apprehension plunged her into a profound melancholy.“

„In the month of Nov. of the same year she did not appear at breakfast; her mother, being alarmed by her unusal absence, went to her own room, to see what ailed her, when she found her in bed, breathing heavily and sighing deeply, her head hanging down from the bed, while she was reaching and vomiting incessantly. Her mother, asking her what ailed her, got no answer; she then raised the sufferer's head, and found her face to be as pale as a corpse, convulsed, and, along with her whole body, suffused with a cold sweat“

„The terrified mother flew to call her father. The parents now examined the vomited matter, and were seized with horror, when they found that it contained a quantity of *arsenic* (oxid of arsenic). The wretched sufferer now confessed to her despairing parents what had happened, entreating them with dying looks not to curse her; acknowledging that she had deserved death, awaited it patiently etc."

„Her father, who was a resolute and well informed man, instantly made her swallow a great quantity of lukewarm milk, mixed with the white of eggs, and when she complained of a violent colic and an urgency to go to stool, he ordered her clysters of the same composition mixed with soap. She fainted away repeatedly, and in the first thirty hours, she immediately brought up all she had taken, always mixed with a great quantity of tough mucus and arsenic. After that period she was able to keep on her stomach both the milk with the white of eggs, and the tea of camomiles and the other medecines, prescribed by the physician, who lived at some distance from her house, composed of *Tinct. Op. Bals. Sulph.,* musk and oil. She continued to evacuate by stool, for three days, more lumps of arsenic, mixed with intestinal mucus and black blood; and the quantity of the mineral poison discharged by her was estimated to have amounted to an ounce and a half."

„Suffice it to mention here, in general, the most essential symptoms, as they manifested themselves in the different systems and organs, together with the dietetic and therapeutic prescriptions founded on them."

„From the fourth day the vomitings were not frequent, and at length ceased entirely; whereas the patient now complained of continual nausea, a burning pain in the region of the pericardium, and of colics which encreased, when her abdomen was touched, of a total want of appetite, an unquenchable thirst, of obstinate constipation, while the sphincters of the anus and the bladder were entirely paralysed, and the urine went off involuntarily in small quantities."

„Her skin was as dry as parchment, cold, discoloured, bloodless, as if dead; her complexion was of a pale yellow hue, as it is after a hemorrhage; her nails were blue, her eyes dull, the pupils dilated, the sight was very weak; the lips were blue, and deglutition was very difficult, without the smallest trace of inflammation in the mouth or throat. These parts, as well as her tongue, were pale, dry, and wrinkled, as if scorched by boiling water. She felt in all the musculous parts of her body intolerable pains, depriving her of all repose and sleep. The voluntary movement of all parts of her body was suspended entirely; the muscles of the chest, back, abdomen, and the upper and

lower extremities were hard, and stretched as in a tetanus, and her intestines, when the integuments were touched, were like extended cords. Her weak and small pulse scarcely beat fifty times in a minute. Her respiration was straitened, slow, suspiring, whilst her whole physical and moral sensibility was perfectly uninjured — and life had again become valuable to her."

„The functions of the secretory organs were suspended entirely, her courses were suppressed for seven months."

„On the sixth day the patient was bled on account of the pain in her abdomen, imputed to a supposed inflammation of the abdominal nervous plexus; it was scarcely practicable to obtain five ounces of blood from the veins of an arm and a foot. Twenty leeches were applied to her abdomen, which, with stroking and squeezing, extracted scarcely half the usual quantity of blood, when they dropped *). The blood, which was of a dirty black colour, constituted an uniformly mixed mass, resembling eldersyrup, was not coagulable, nor was the least vestige of a bloodcake nor of serum to be seen. After this loss of blood the patient felt herself much weaker, neither did she perceive the least abatement of pain."

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*) It is to be regretted, that these animals were not examined after they had dropped.

„The most important effects of this arsenical impoisonment, determining all the alleged pathological phenomena, may be reduced to the following particulars:

1. Dissolution, decomposition and transformation of the chymical properties, and of the mixture of the blood;
2. an extinction of irritability, even to the minimum; f. i. suspension of the functions of movement and secretion etc.
3. excessive sensibility (general pains etc.)."

„The first and immediate effect of the poison seems to have been the decomposition of the blood, causing the destruction of irritability, whose principle resides in the red and oxigene particles of the blood, which appear to have been consumed entirely."

„The treatment adopted by five different physicians, celebrated both by their writings and extensive practice, answered in a great measure the indications of this severe disease. It would, however, be superfluous, if I were to fill many pages with an enumeration of all the remedies applied by them; suffice it, therefore, to observe in general, that they prescribed a great many ferruginous preparations, in various combinations, mucilaginous, aromatic, tonic and antispasmodic substances, such as camphire, musk; with lenitives, narcotics, eccoprotics, diuretics, emmenagogues and sulphurates, applied internally. To these they added

baths composed of milk, iron, soap, aromatic herbs; and, among others, mineral ferruginous and sulphureous waters etc.; external provocatives, consisting in frictions, plaisters, nay even in the employment of electricity and galvanism. However all these remedies were in vain uninterruptedly applied for six weeks: they produced no material change in the patient's deplorable state."

„When the disease had lasted already eight months, a person ignorant of the medical art, advised the patient to drink every morning, before breakfast, the fresh and warm blood of pullets and pigeons, in doses of two or three ounces each time. The effect of this remedy was extraordinary. The patient perceived, soon after she had begun taking it, a return of encreasing strength, the tetanous hardness and tension of her muscles abated; her fingers and arms began to grow moveable; her cachectic and chlorotic complexion changed for the better; the action of the secretory and excretory organs was revived, her courses even returned, though sparingly and irregularly; the irritability of her nerves abated, as well as her pains etc.; in short, the use of this remedy produced effects, which, till then could not be obtained by the employment of any other. However, already at the end of the third week, the patient conceived so decided a disgust against it, as made her invariably bring up again the

blood, as soon as she had swallowed it, and she could not be persuaded by any means to continue taking it. These effects, however, did, nevertheless, revive the hope, given up even by her physicians, of the possibility of her restoration, and excited the idea to advise her to try the thermal water of Wiesbaden — in order to imbibe, as it were, the blood of the terrestrial organism; and she actually felt herself strong enough, to undertake the long and fatiguing journey, which would have been absolutely impossible a few weeks before."

„Though she was supplied with all requisite conveniencies, her weakness, pains and difficulty of moving, did not permit her to proceed on her journey, but by short stages. She arrived at Wiesbaden in June, where the referent, who happened to be there at the same time, saw her daily."

„She was obliged to rest herself for several days, before she could begin to bathe and to drink the water. She could, at first, remain in the bath only for a few minutes, while she could bear very well to drink the water, and even was able to drink several pounds a day, divided between the mornings and evenings. Later she took some vapour-baths. However, salutary as the internal use of the thermal water proved to her, so little advantage did the common- and vapour-baths appear to afford. She felt each time very much fatigued,

weak and irritated, and took the bath only with great reluctance, the assistance of several persons being required, to get her into it."

„At the end of four weeks the state of the patient was somewhat improved, her pains being less frequent and severe in the day, and when she was out of bed, though they returned with greater violence at night. When she was made to sit up in bed, or seated in an easy-chair, she was able to keep herself upright in that position; she could even bear taking a ride on ass-back. Her sleep, appetite, digestion, together with the other animal functions, inclined again somewhat to their normal state; only the free and voluntary motion of her limbs, except that of her arms, was still wanting entirely; she could not get out of, nor into, her bed without assistance *)."

*) About this time my worthy colleague left Wiesbaden, comitting to my care his patient, whom I found extremely emaciated, feeble and irritable. Both her tongue and the inner parts of her mouth were still wrinkled and white; her power of digestion, however, was more active, her skin less parched, and I could plainly perceive, that the functions of nutrition and assimilation were roused; I, consequently, directed the bath to be discontinued for some days, whilst I ordered her to drink the thermal water as before. Perceiving, sometime after she had recommenced bathing, no manifest improvement to take place, and that the patient was again growing very irritable, I proposed to her to discontinue

„Being now prevented from attending this patient any longer, I committed her to the care of Dr. *Peez;* but found her six weeks after, in the same state, f. i. still incapable of moving her rump and lower extremities, though her general health was much better. According to my advice she now used the thermal water of Wiesbaden, both externally and internally, four weeks more; but no progress to recovery being perceived, and a third physician happening to be consulted, who, like ourselves, declared the patient to be labouring under an incurable spinal paralysis, she gave up all hope of recovery, and left Wiesbaden in the latter end of August."

„A fortnight after her departure, I received a letter from her mother, informing me, that God had wrought a miracle upon her daughter; she had remained for eight days in the same state in which she had left Wiesbaden, declined all farther medical aid, and had been longing only for death, to be delivered from her misery. But on the ninth day she sent for her mother, and said to her: „Dear mother, assist me to get out of my bed; I fancy I could stand upright."

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the use of the thermal water altogether, because it would at a later period develop its salutary effects, if it actually could be conducive to the cure of this violent disease. Her continuing to bathe, nevertheless, was the exclusive merit of my respectable colleague. Dr. Peez.

She actually could not only stand upright, but even walk a few steps, though not without support."

„From that day she mended so rapidly, that in the course of three weeks, she was able to walk a quarter of an hour, and at present (two years and a half after her having been taken ill), she is the very picture of beauty and perfection. She married, in the mean time, her lover, and now is the mother of a blooming infant."

III.

Stagnating hemorrhoïds, gout, obstructions in the abdomen, defective digestion, diarrhoea alternating with constipation, melancholy, extreme febleness, incipient paralysis of the legs.

The principal outlines of this very complicated case were as follows:

Before Mr. v. H. was taken ill, he was tall, blooming and corpulent. Hemorrhoïds and gout were hereditary in his family. The former had been fluid with him for many years. Residing in a seatown, he was seized with the gout, the consequences of which were swelling of the articulations and stiffness of limbs. He found great relief at the mineral springs of *Nenndorf;* but abandoning himself again to all kinds of debauch, he was taken with an obstinate intermittent fever, in the course of which the

hemorrhoïds ceased to flow, while his abdomen grew hard and tumefied, and his liver painful; he now was seized with jaundice and new accesses of gout, which were accompanied by gouty metastases upon his hands, knees and legs. His body began to emaciate, his strength to decline, and he fell into a profound melancholy. Thus he lived for eighteen months, confined to his apartment, debarred from the enjoyment of the open air, exercise and society, until he was persuaded to make a trial of the baths of Wiesbaden.

He arrived here in July 1819, the very picture of phthisis. When he attempted to walk, carefully supported, his legs shook and trembled. Every inquisitive look, directed at him, every question expressive of concern for him, instantly suffused his, otherwise pale, countenance with a glow. His sufferings and solitude had rendered him so sensible of the influence of fresh air, that he was not capable of bearing the neighbourhood of an open window, without an access of vertigo. He spent most part of his time upon his sofa. His pulse was irregular and quick, as generally is the case in a state of extreme irritability attended with great weakness. His sleep and appetite were very indifferent; diarrhoea alternated with constipation, and his stools were coloured very little, in consequence of his disordered liver.

When he commenced to make use of our

thermal water, he could only, every other day, remain 15—20 minutes in the bath, in which aromatic herbs were steeped. He got rid of his diarrhoea, after he had taken small doses of the water of *Schützenhof*, in the morning and evening. He now remained from ½ to ¾ of an hour in the bath, and gradually drank larger quantities of thermal water, after which he regularly took a dose of *Elix. bals. Hofm.* Having continued this treatment for twenty days, he added clysters of the same mineral water, and, at the same time, had strong douches applied to his abdomen, knees and the articulations of his hands. His stools, which had become more frequent, emitted a very strong specific smell, exhibited various hues, and produced a very salutary influence upon his general state and his gloomy disposition of mind.

He rode out every day, and exercised himself in walking. After the fourth week he was already able to dine at the public table, where he was cheerful and communicative. After the sixth week his health had improved considerably; his abdomen was soft to the touch, and his animal functions began to be less irregular; his complexion was growing clearer, and it was only in his eyes that some slight traces of a yellow hue remained. He could walk much better than before. The humour which had gathered in the articular cases of his knees and hands, had, indeed, grown considerably less, but

he had immediately beneath his knees, and on his left wrist considerable bags, feeling like sloughy tumours, which frequently appear in cachectic subjects as the result of an *incomplete arthritic* metastasis. The whole treatment had hitherto had but very little influence upon these tumours.

I prevailed on this patient, who was reduced to the lowest ebb, to repair to *Schwalbach,* and to try the effect of the tonic baths of that place. Three weeks later, I saw him again; his complexion was clear and youthful, and he had regained a great deal of strength and flesh. The hemorrhoids soon began to be fluid again, the flux returning frequently in the course of the subsequent winter, which the patient, generally speaking, passed in a tolerable state of health.

He repeated the thermal treatment in the subsequent season, because he was, in addition to hypochondriac disorders, troubled with a violent tension beneath the abdomen. It appears that he had lived too freely and used too little exercise, in the intermediate time.

More copious doses of thermal water, clysters of the same, and a strong douche upon the abdomen, which provoked abundant alvine evacuations, soon delivered him from these sufferings. The tumour of his wrist, as well as those of the articulations of his knees had considerably diminished during winter. A strong jetting douche, combined with embrocations,

now served to reduce these tumours almost entirely in five weeks. The convalescent now spent some weeks at *Schwalbach*, where he regained strength enough to enable him to undertake a journey to *Stockholm* in the stormy and cold days of October, and to perform it without experiencing any fatal consequence.

IV.

The following observation, which I have selected from among many others, on account of its simplicity, will prove the efficacy of the thermal water of Wiesbaden in scrofulous disorders, in general, and scrofulous ulcers, in particular, and how great a number of baths even delicate children may safely take.

The father of E. D. a boy six years old, was rachitic, and still exhibits the cicatrices of a former caries of the articulations of his fingers, some of which are contracted. With his son the disorder declared itself for the first time, in his third year, when small hard tumours broke out in his face, several fingers, metacarpus and feet, while the child still enjoyed a good state of health. In vain did two eminent physicians exert themselves to the best of their abilities, to put a stop to the farther development of the disorder. About spring and autumn the boy was seized with a general and long erethism, attended with a slight fever, and invariably followed by additional tumours, while

those that had been formed before, showed a greater inflammatory activity, and, consequently, a formation of pus was provoked. Slow abscesses, filled with a virulent pus, now made their appearance, and at the bottom of these the periosteum and bones appeared to be swollen very much.

This disorder having lasted about three years, when the loss of several joints of the child's fingers was imminent, and it appeared impossible to put a stop to the progress of the disease by medical means, the physicians sent their little patient to Wiesbaden, (in June 1828), choosing for him a very sunny lodging. On his arrival he had nine open sores, and several tumours with fluctuations. A slight fever, of some months standing, and a considerable tumefaction of his abdomen, presented important considerations respecting the proper mode of administering the thermal water. I directed him to remain in the bath only for a quarter of an hour, and to drink every morning and evening of the water of *Schützenhof,* in doses which did not produce purging. He dis continuedbathing, frequently for several successive days. The feverish erethism being subdued, he remained in the bath a longer time, and began to have hot dropping-baths applied to the tumefied parts. After a treatment of eleven weeks, during which the patient had taken 36 general baths (besides many partic-

ular ones, to his legs and hands, on days when he put off the former), and 16 douche-baths, eight out of his nine sores were closed, several tumours had disappeared entirely, and the remaining ones were reduced very much.

In this state he departed from Wiesbaden, his general health being good, and his appearance blooming.

The subsequent autumn and winter he passed more comfortably, than the preceding. About spring the erethism, to which he had been subject so long, awoke again, though in a less degree of violence. Several glands began, however, to tumefy, and some old sores of his fingers and feet burst out again. This determined his physicians to send their patient to Wiesbaden already in May. Being entirely without fever, and having grown much stronger, he was able to use the thermal water of *Schützenhof* more freely than before. Having, with some intervals, taken 68 general and 38 topical baths, applied to the different glandular tumours, the swollen periostium and bones of the articulations, the former disappeared for the greatest part, and the sores closed.

It his highly probable that, for some years, in spring, an excitation will manifest itself, becoming, however, continually milder, until this morbid aberration of the plastic powers will disappear entirely, and the growth of the body be regular. Time must show, whether he will

once more have occasion to make use of the thermal water of Wiesbaden, or not.

V.

Cure of a quinsy of the chest (syncope anginosa, angina pectoris), *and masked gout.*

Dr. *Ritter* has published *), amongst others, the following case of a quinsy of the chest, which, as he informed me, was cured by the use of the thermal water of *Schützenhof*.

The patient was fifty odd years old, had crossed the ocean several times, and repeatedly visited America, the East-Indies and China. Being habitually raw and debauched, he soon, sailorlike, used himself to strong liquor, and drunken excesses; his usual beverage was grog (made of two thirds of water and one third of rum, or other spirits). About twenty years ago he was seized with the gout both in his hands and feet; yet his disorder was not a complete podagra, for the great toes were not affected. The medicines, administered by the surgeon of the ship, gave him no relief, which made him resolve, at last, to let his disease take its natural course. His limbs gradually got more flexible, though they still remained painful and rather stiff. He did not change

*) *Journal der practischen Heilkunde von Hufeland.* B. XX, 1804. I communicate here only an abridgement of his statement.

his mode of life, and now was tortured every autumn by an access of gout.

Now he happened one day, as he just was recovering from such an access, and rather intoxicated, to fall over board into the cold and stormy sea, and though he was taken up soon after, some hours elapsed, before he could obtain the requisite assistance. The patient, awaking in the night from his first sleep, felt himself seized with a heavy oppression, great anxiety and palpitations of the heart. The remainder of his pains and gouty tumours had disappeared, being superseded only by a slight numbness. The oppression continued for several days, when it, at last, abated, returning only periodically. When he began again to take some exercise, he observed, that he could not walk for a quarter of an hour together, without being obliged to stop, all his efforts to proceed being fruitless; that he was, at the same time, seized with an overwhelming oppression of the heart, with pain in the sternon, in the left side of the chest, and in the upper part of the arm, and that he was obliged to sigh heavily. Giving free vent to eructations and nausea, afforded him some relief. Now he was seized with the paroxism even in the night and against morning, especially when he, at supper, according to custom, had endeavoured to drown care.

Violent palpitations of the heart then awakened him after midnight, when he suffered the

most intolerable oppression, and pains extending to the articulation of the elbow.'

His pulse, which till then had been full, strong, sometimes intermittent, became gradually irregular, small, quick, when the access began to approach to syncope and the cold sweat broke out. On these occasions large doses of musk and valeriana afforded him relief.

His physicians at last sent him to Wiesbaden, whose baths were the more plainly indicated, as a metastasis of gouty matter, without doubt, was the original cause of this pectoral angina.

He immediately began, without any preparation, to bathe in a temperature of 95° Fahr. In the first baths the patient felt, for some minutes, a slight oppression and palpitations; his pulse became quicker, until the salutary effect of the water had communicated itself to his whole nervous system, when the pulsation became slower and more regular than it had been before the bath.

After the eighth day, the reduced reaction of his skin, which now could scarcely be perceived, and its small degree of suppleness, rendered it necessary for him to remain longer in the bath, and to prolong his stay in it to one hour and a half, in a temperature of 100° Fahr., which was kept up to the last minute. He took two such baths every day.

In order to aid the efficacy of the baths,

his whole body was well rubbed, sinapisms put on the articulations of his hands and feet, and mezereon *(Daphne mezereum)* applied to the epigastric region. At night the parts that had been affected with the gout, were wrapt in oiled silk, and in the morning, whilst in bed, he took a concentrated decoction of *Rhododendron chrysanthum.* The articulations grew painful and red, and began to swell. He perspired copiously in the morning, *after the bath,* and his skin now was moist all day. When these phenomena made their appearance, the accesses became less violent and shorter, the pulse beat more regularly, the pain in the epigastrion and the arms decreased; the convalescent ventured already, in spite of the still remaining podagric pain, to take longer walks, and, some time later, even against the wind and uphill, without experiencing an access of the former symptoms.

Having taken fifty six baths, he was entirely exempt from all accesses of angina, and his cure was accomplished with the seventieth bath, when all gouty pains left him by degrees.

A twelvemonth after his departure from Wiesbaden, he did, indeed, again experience an access of gout, but never any symptom threatening a return of his former disease.

CHAPTER XVIII.

When is the thermal water of Wiesbaden indicated in syphilitic and mercurial diseases?

THE thermal springs of Wiesbaden have been famous long since as a refuge in *inveterate syphilitic disorders.* Assisted by a very abundant experience, I shall show, what aid may be expected to be derived from them, and on what conditions it may be obtained.

The thermal water of Wiesbaden does not cure primary and purely syphilitic complaints; these, according to my observations, daily make greater progress, if not specific remedies, qualified to destroy the poison, be used. I think, nevertheless, that in some patients the progress of syphilis was arrested a little during the first weeks of bathing (as for the internal use of the thermal water in cases of this kind, no benefit may be expected to be derived from it; primitive venereal ulcers, as well as wounds caused by cutting weapons or gunshot, received by

an infected person, actually were deterged in the beginning of bathing and the process of carnification advanced, though no specific remedies were given *). This apparent amendment, or rather pause of the disease, was, however, very transient, the state of the patient growing worse in a short time, conformably to the normal progress of the disease. I would not, therefore, advise any one, to hope for relief from the water of Wiesbaden, in primary, and purely syphilitic disorders, in general; for I am far from attributing that momentaneous amendment I have mentioned just now, to an antisyphilitic virtue of our water. I am rather inclined to suppose, that that phenomenon was occasioned by a general excitation, produced by the thermal water, and tending to restore the integrity of the whole body, as all thermal waters use to do.

It cannot, however, be denied, that primary syphilitic complaints, if simultaneously combatted by specific internal remedies, disappear more completely and promptly, by the use of our or any other thermal water.

It is particularly in secondary and inveterate syphilitic disorders, that the great efficacy of the water of Wiesbaden manifests itself sur-

*) Neither do I presume to decide, whether this phenomenon takes place in all infected persons, or is limited only to particular vigorous constitutions.

prisingly. If the patient already have gone through one or more mercurial courses, and symptoms really syphilitic, or such as resemble them, continue to manifest themselves, or reappear, the thermal water of Wiesbaden *will especially assist the general treatment.*

The important systems of the animal economy, especially the lymphatic system, frequently appear not to be disposed to bear mercurial preparations, and thus to counteract the extirpation of the poison. The thermal water removes this disposition, by reviving the energy necessary for the administration of specifics, and thus promotes a radical cure.

It will be proper here to mention the great number of venereal eruptions that occur. I have observed and treated here these cutaneous diseases from simple serous or mucose pustules and coppery spots to the very leprosy accompanied by scaly and crustaceous ulcers; and witnessed the cure of many individuals by the *very same* internal remedies, which had been employed fruitlessly, before the patients had made use of our thermal water.

In swellings of the fibrous periosteum, covering the bones, in those of the articulations, in the soft tumours, arising contiguously to the firm parts, which, according to Cuillerier *),

*) *Cuillerier on syphilis, its symptoms and remedies.* In the beautiful edition of *Renard*, en-

invariably are symptoms of an obstinate syphilis, having grown constitutional, common domestic baths, have already gained great reputation, and nothing can be done, in most instances, without their aid; whence we may very reasonably expect, that the thermal water of Wiesbaden will be much more conducive to produce this effect; yet, when the poison is not destroyed completely, it is absolutely necessary that antisyphilitic remedies should be given at the same time. When, however, the poison is destroyed, and the above mentioned complaints will not give way, assuming a chronic character, we may be assured that the water of Wiesbaden will restore the health of the patient, if it be not prevented by a scorbutic diathesis, or the bone have got as hard as ivory, a state which precludes the possibility of reviving the vital power, which has nearly become extinct, and consequently is incurable.

I must, however, observe, that the cure of these diseases of the bones, especially when the patients are weakened very much, requires that the general and topic baths should be continued for a long time, but that also part of the incipient resolution safely may be left to the secondary effect of the thermal water. This applies particularly to soft tumours, which are formed contiguously to the articulations.

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riched with numerous practical additions. Published by Kupferberg, at Mayence, 1822.

Bags of this kind, als large as a man's fist, had formed themselves above the knees of a man, who was fifty years old, and not very vigorous. He took more than sixty general and topic baths; the tumours did, indeed, decrease considerably, but grew harder, in consequence of the absorption of the fluid parts; they disappeared, however, entirely after he had left the bath for some months.

Osteocope pains, arising from syphilis, or an inconsiderate use of mercury, frequently distress both the patient and his physician. In the disorders of the former class, the water of Wiesbaden proves serviceable only when the requisite remedies are simultaneously employed to remove the original cause of them; but when these pains are the attendants of a mercurial cachexy, and, at the same time, of a rheumatic nature, the water of Wiesbaden may confidently be expected to effect a cure, without the aid of medicine.

The different modes in which the thermal water is employed, viz. as general bath, dropping-shower- jetting- or vapour-bath, are regulated by the vital state of each individual, the parts affected, or the existing complications.

In this case the bath does not preclude at all the simultaneous employment of medicines serving to remove weakness or phlogosis etc., nor that of topic remedies. The former frequently are absolutely necessary, and the latter

very often of great use in violent pains, and before the salutary effect of the bath can manifest itself. Among these topical remedies are reckoned fomentations with a decoction of cicuta, hyosciamus with laudanum, leeches etc.

The mineral waters of Wiesbaden are peculiarly useful in declared mercurial cachexies, in which mercury is very apt to produce very malignant ulcers, caries of the bones of the nose, the palate, the cranium etc.; they are, farther, to be recommanded, when the physician is doubtful, whether the disorder be pure syphilis or a mercurial disease, in which case the english medical practitioners prescribe decoctions of sarsaparella, gujacum, and the french physicians *Musitan, Fels* and *Vigaroux;* in such cases, our baths, combined with these remedies, powerfully promote the cure.

In declared mercurial cachexies and ulcers in the hard and soft parts, caused by the former, they frequently are conducive to recovery, without the assistance of other medicines *). In the twelfth chapter I have communicated the very striking case of a lady whose highly complicated and dangerous disease was cured entirely by the use of the baths of Wiesbaden, and could relate many more of

*) To this class belong many other complaints, owing to the same causes; f. i. mercurial palsies, mercurial shaking, the loss of hair, after a mercurial course etc.

the same nature, that came under my own observation, were I not apprehensive of fatiguing the patience of my readers; I shall, therefore, add only the following instance.

A man, who was 43 years of age, and had been indisposed for a long time, was suddenly, and without any evident cause, affected with ulcers in the soft and hard parts of the roof of his mouth, which the most experienced physicians declared to be syphilitic; his complaint not giving way to the internal use of mercury, mercurial ointment was rubbed into his skin twice. The ulcers did, indeed, disappear for some time, but always broke out again, though not to the same extent as before, confining themselves to the bony part of the roof, which exhibited a large fissure.

In this condition he remained a whole year. In the mean time he had also been affected with wandering arthritic pains *(arthritis vaga)*, which compelled him to travel to Wiesbaden in a very cold and moist season. The latter continuing all the time he was using the bath, he was confined to his room. Though he was reduced to extreme weakness, he mended, nevertheless, a good deal in the course of four weeks. The arthritic pains and ulcers had not, however, disappeared entirely, when he left Wiesbaden, though they had subsided considerably; and from the former he was soon delivered for ever. The ulcer in the roof of his mouth did, indeed

(after his departure from here), grow less in size for some time; however, the unfavourable influence of the season, to which the patient exposed himself heedlessly, seemed to enlarge the sore by degrees.

Decoctions of woods, together with a proper regimen did, indeed, gradually reduce the size of the ulcer; however, it still was considerable enough.

Some months after the employment of these remedies, he returned to Wiesbaden. When he had taken eighteen baths, every vestige of the ulcer had disappeared, and ever since that period (it is now ten years), the man has continued to be perfectly well.

Diseases of this kind, which originally are syphilitic and generally neglected by the patients, or improperly treated, when they already have made a considerable progress, require, in most instances, a treatment of no less than two or three years, however careful it may be. Yet I have gained the persuasion, that that period may be shortened very much by a well regulated use of our baths, and that the latter are highly conducive to a radical cure. As for the rest, I do not believe that this sanative power belongs exclusively to the thermal water of Wiesbaden, but my personal observations are confined to the latter, having had no opportunity to ascertain the efficacy of other baths in diseases of this kind.

It happens very frequently that, notwithstanding the most pressing indications of a mercurial treatment, the patient cannot bear this medicament, and when this is the case, nothing is more proper to revive his extinct susceptibility for it than a previous use of some thermal water. This end being gained, a mercurial course may be successfully attempted a second time. It is on this account that the wells of Wiesbaden are resorted to as proper means of preparing the body for mercurial embrocation, and I may confidently protest that I never experienced a return of the disease, against which I employed them in such a case.

The wells of Wiesbaden are, finally, successfully resorted to by weak and delicate persons after a radical cure of the above mentioned diseases; for such heroic cures always weaken some systems of the body; their excitability is not in unison with that of other organs, some functions are not yet regulated, some morbid matter is still to be excreted, the general organism still requires to be excited. *That,* and *how* the baths of Wiesbaden answer this purpose, has been shewn in many parts of this work.

In cases of this kind the ferruginous water of Schwalbach is frequently used internally along with the baths of this place. In serious diseases, against which the external and internal use of thermal water is employed, it is, in

general, absolutely necessary, that patients should observe, in every respect, the strictest regimen, if they desire to insure success. Patients belonging to the class of which I have been treating just now, in particular, should observe this rule very strictly, and carefully be on their guard against physical and moral influences, the fatal consequences of which no repentance can eradicate.

CHAPTER XIX.

Observations on the virtues of the thermal water of Wiesbaden in wounds and their consequences; in palsies caused by wounds; in ulcers.

THE external cutaneous system is, on account of its great extent, the organ that most immediately experiences the influence of mineral baths. It may be said to be the mediator between the latter and the internal organs of the body. Hence it is very evident that thermal waters cannot but be highly efficacious in diseases seated in the external skin, or in the muscular system. Experience having proved the correctness of this observation these many years, I do not hesitate to subjoin a few remarks on the sanative powers of the thermal water of Wiesbaden in the aforementioned diseases.

The murderous campains of the late wars brought to the wells of Wiesbaden thousands of warriors having wounds still open, or labouring under the consequences of such as were

closed. Mutilated and paralytic individuals of all nations flocked to Wiesbaden, each flying to the *Bethesda* of southern Germany, to be delivered from the burden of his sufferings. Patients who for many months had not enjoyed the blessings of sleep, arrived here with burning wounds, worn out by hectic fevers, loss of blood and excruciating pains, and frequently enjoyed the most delicious repose after the first bath. Sleep and appetite returned, the hectic fever disappeared in a short time, and along with the return of strength, their wounds gained a better appearance, and cicatrised very rapidly, if their recovery was not retarded by a syphilitic or scorbutic diathesis, by dangerous hurts of the articulations, splinters of bones, or serious injuries sustained by some important intestine part. It struck me very much, that many patients, who were severely wounded, expressed a lively desire for the tepid bath. This was an anticipation of the relief they expected to derive from the thermal water; of this they were so confidently persuaded, that they were incapable of resisting their desire, when they had entered the atmosphere of the bath. Fatigued as they were by the journey, on their arrival, they would rather rest themselves in the bath than on a couch, and caused themselves to be carried into it, as if impelled by instinct. The thermal water afforded them instant relief, as soon as it touched the muscles and nerves, that were painfully af-

fected, either by having been exposed to the air, or hurt by a dressing laid on unskillfully. All declared, that their pains were calmed, and the tension of their limbs had ceased; a soothing balm seemed to penetrate the suffering parts, and to stop the irritation. I do not recollect one instance, in which balmy sleep had not visited the poor sufferer immediately after the bath.

Any one may now easily convince himself of the correctness of what I have said, in a preceding chapter, of the particular state of patients, in the commencement of bathing, and of the cause of that phenomenon. Even the most vigorous persons, that had not been wounded, when they went into the bath, *immediately* after the overwhelming fatigues of the campain, were forced to pay the usual tribute to sleep, as soon as they had emerged from the soothing fluid. I have seen officers that scarcely could be roused in the morning, and were obliged to sleep for some hours in the day.

After ten or twelve baths, this propensity to sleep, accompanied by apparent lassitude and weariness of limbs, frequently was dispelled very suddenly, especially when the patients took a good deal of exercise in the open air, taking care not to fatigue themselves too much. I have, indeed, also seen other individuals who did not experience this propensity, or were affected with it only slightly. But these were

vigorous subjects of a gentle disposition, whose bodies had not been irritated by spirituous liquor, nor fatigued by corporeal or mental exertions. They had not, consequently, overstepped the natural limits of excitation, and the mineral bath, which reduced the artificial bodily irritation to its normal state, and gives no room to the phenomena of drowsiness, lassitude etc., could not produce that effect in them.

This first period of the influence of the bath being past, it was highly interesting to the observer to see, how nature, excited to aid itself, came to assist our baths in re-establishing the perspiration suppressed by so many causes, reducing the disorder in the intestine organs, and in *producing morbid metastases upon the skin, or the organs that have the greatest affinity to it.* These phenomena were frequently experienced even by persons returning from their campains free from pain and uuhurt, and who had repaired to Wiesbaden for the sole purpose of temporary repose.

Many individuals were affected with slight pains in the articulations, in the muscular integuments, in wounds cicatriced long ago, or in the tumours of mucous bags; whilst others were affected with an accumulation of lymph in the articular capsules, slight cutaneous eruptions etc.

These disorders generally were treated only by an uninterrupted continuation of general baths, douche- and shower-baths, and these

warriors were soon enabled to leave our baths completely secured against the pernicious consequences of fatiguing campains.

Wounds sometimes presented to me the same phenomena, only in a different shape. They had, for some time, a very promising appearance, carnifying very rapidly, — then the wound suddenly grew very sensible, secreted more lymph, or became dry and painful, the edges inflamed, the lymphatic vessels began to swell, and suppuration encreased. In most instances I attempted in vain to find out the cause of these phenomena, until, at length, I discovered it in the simultaneous pains in other parts of the body, observing that in proportion as the latter subsided, the wound commenced again to be in a mending state. Nature chooses (which is disregarded but too often) the wound itself, for a vehicle by which it discharges the remaining morbid matter, or re-establishes the interrupted harmony of the internal and external parts. It should be considered that the most opposite temperatures, the continual alternation of extreme activity and profoundest repose, exercise a powerful influence upon soldiers, and that a quiet equilibrium of the functions of the internal organs, and of those of the cutaneous system cannot take place during the fatigues of an active campain. The matters that are to be excreted by the skin, remain in the body, if not removed by another excretory

organ, and, of course, cannot but generate other diseases, or, at least, a disposition for them.

The tepid bath, which regularly has the temperature of the *internal* parts of the human body, and, consequently, surpasses by some degrees that of the cutaneous surface, equipoises the internal and external warmth of the body, favours the circulation of the periphery, provokes transpiration, and nature faithfully promotes the excitation produced by the bath, by throwing the morbid secretions upon the skin and the organs to which it has the greatest affinity. Thus, the bath, by producing artificial diseases, is at the same time the greatest, and, perhaps, the only means of curing them.

Out of a great many cases of this kind, I shall here quote only the subsequent one:

Mr. v. R. major in the french imperial guards, had, in the battle of Moscau, received a gun-shot, which had penetrated deeply into the jawbone of the right cheek, and thereby blinded his eye on that side. The pupil was distorted, immoveable, and very dilated. Being advised to repair for relief to the baths of Wiesbaden, he arrived here in the beginning of May 1813.

He was a young and vigorous man, who, besides his wound, which had cicatrised long ago, exhibited no other marks of disease. He bathed every day, and, besides, had topic baths thrown upon the scar of of his wound and his

blind eye. Shortly before his arrival at Wiesbaden he had been obliged to perform long journeys, and to overexert himself in the discharge of fatiguing duties. Here he enjoyed all at once the profoundest repose. When he had bathed several times, he was seized with an irresistible drowsiness, a leaden heaviness in all his limbs, and felt violent pains in many parts of his body. No external cause of this phenomenon could be discovered. These pains were vague at first, but soon settled upon the articulations of his knees, where they rapidly formed the most violent hydropsy *(hydrarthrosis)*, I ever have seen, attended with a considerable phlogosis and tumefaction of the external integuments. It is evident that he was unable to walk. I made him undergo an antiphlogistic and sudorific course, whilst he continued to bathe, most commonly twice a day.

When he had been seven weeks at Wiesbaden, all vestiges of his sufferings had disappeared. During the latter days of his stay with us, he had hot dropping baths applied to his diseased eye and the contiguous parts, which restored mobility to his disordered and immoveable pupil. His diseased eye, at the same time, began to distinguish even small objects.

All physicians know, that in the later *consequences* of wounds, in painful cicatrices, in atrophy of limbs, ankyloses etc., the thermal

waters occupy the first place among all known remedies. However, in these latter cases too, the patient will experience less relief whilst he is using the bath, than in the next subsequent months.

If proper attention be paid to the end nature purposes to gain in such cases, what I have said on this subject will be understood easily. The violence of the hurt destroys the organic continuity from the cellular texture to the very nerves and the periosteum, consequently, extends to the organs of nutrition, movement and feeling. Nature does, indeed, by means of the cellular texture, supply this suspended continuity; yet this is not sufficient for the accomplishment of the intended purpose. If, for instance, the main trunc of some vessel be lacerated, nature frequently must labour to supply the limb with blood by means of the lateral vessels, to enlarge the latter, and to form new vascular textures, and communications between the vessels. The lateral ramifications of the nerves undoubtedly supply, in the same manner, the functions of the main trunc, when this is cut, as it has been confirmed by the latest observations. But every physician must be aware, that such important operations of nature cannot but require a longer space of time, than that which commonly is spent in a bathing place. Convalescence is, however, considerably accelerated, when a potent thermal

water awakens the paralysed vital activity, which, unaided by baths, would have become extinct. I could quote instances, in which the progress of convalescence had been arrested for years, but advanced rapidly after the use of general and topic baths Mucose bags are sometimes seen to rise in the parts contiguous to the wound; infiltrations of the cellular texture ensue, presenting actual schirrhosities, retarding the organic activity, or, by their pressure upon the vessels of the nerves, considerably diminish the nutrition of the wasting limb. After a gun-shot, which penetrated the muscles closely underneath the bent of the knee, I saw large mucose bags form themselves, obstinately remaining, even after the wound was completely healed. The lower part of the thigh was, besides, emaciated, and a paronychia (whitlow) had formed itself on the great toe, and resisted all the exertions of the medical art. The joint use of general and topic baths introduced the resolution of the tumours of the mucose bags, but they did not disappear entirely, before the patient had left the bath some months. Now the whitloe, too, began to heal, the emaciated limb gained flesh and strength, and the leg recovered its normal vigour and feeling.

The majority of these consequences of severe wounds obstinately resist all external incentives, viz. frictions etc. The organs upon

which they are to act, are not capable of supporting such local therapeutic excitements, because the nerves, the blood- and lymphatic vessels, which are the vehicles of transmission, are destroyed, or, at least, deprived of their activity. In this case the most general mediating power is absolutely required for rousing *from within* the dormant vitality, and for compelling nature totally to renovate the interrupted organic actions, and the functions of the affected part *).

It has been known long since that thermal waters are highly useful in the cure of *inveterate ulcers*. When they are of a rheumatic nature, or owing to a metastasis, or to an ill-treated cutaneous eruption, or kept up by it, we know of

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*) The thermal waters of Wiesbaden having proved highly beneficent to the Sovereigns of the country, is attested by Dr *Hoernigk* in his work on Wiesbaden, printed at Frankfort on the Mein, 1637.

He informs us, that prince *John* of *Nassau-Saarbrück* had availed himself with great advantage of the water of Wiesbaden, at different times, viz. in 1618 when he had broken a leg, in 1621, when he had hurt his knee; in 1627, against a luxation of his shoulder, under which he had laboured for seven years; and, lastly, 1631 against the most violent pains in his right arm, which had rendered the prince unable to walk and to lie down for eight weeks, but had been promptly removed by the thermal water of Wiesbaden.

no remedy superiour to naturally tepid mineral baths.

They are, besides, the *safest* remedies; for the manner of action peculiar to these waters precludes all apprehension of any injury to the patient's general health, arising from the cure of such ulcers, which is often the case when desiccative or other remedies are employed. Eruptions whose continuance is necessary for the preservation of the entire organism, can be cured by means of thermal waters as little as ulcers of the feet, which frequently are highly conducive to health.

There are, however, several kinds of *specific* ulcers against which the thermal water of Wiesbaden may be used very successfully, on account of the nature of its component parts. Among these must be numbered cachectic and arthritic ulcers, as well as the scrofulous ulcers of young people, who generally require the simultaneous internal use of the water.

The thermal water of Wiesbaden, moreover, is particularly useful in ulcers that develope themselves as consequences of chronic abdominal diseases, f. i. hemorrhoïds. It is well known, that, in cases of this kind, we must take notice not only of the vital state of the body in general, but also of that of the ulcers in particular, which determines the special modifications of the administration of the baths, or of

the internal medicines, as well as the prognosis.

In scrofulous ulcers of old and cachectic persons, as well as in scorbutic ulcers, the baths of Wiesbaden *are hurtful,* from very obvious reasons.

CHAPTER XX.

Efficacy of the water of Wiesbaden in some diseases incident to horses.

THERE existed already in ancient times, in several bathing-houses of this place, viz. in the *Spiegel*, the *Bock* etc. establishments appropriated to the bathing of horses. The observations on this head were not, however, noted down, and it is likely that it was foreign to the sphere of the former veterinary physicians of this place, to pay any particular regard to this subject, so highly important to their art. This circumstance, in addition to the numerous visitors that use to frequent these baths, caused their great efficacy in the diseases of animals to be disregarded, and the horse-baths to be abandoned by degrees. The founder of the bathing-establishment to the four seasons did not, however, neglect this point, and it is to be hoped, that the owners of other bathing-houses will not be remiss in following his example.

I have made, already some years since, experiments upon the use of the baths of Wies-

baden in different diseases incident to horses, especially in rheumatisms, tumours of the articulations, in stiffness of the legs, though the mode of administering the baths could not but be very defective, on account of the want of proper conveniences.

We are indebted for the revived attention to this great curative means to Mr. *Hoerd* veterinary surgeon to the court of *Stuttgart,* who has made many experiments upon the efficacy of the thermal water of Wildbad *) in diseases incident to horses, as they, undoubtedly, will be corroberated by the effects of the thermal waters of Wiesbaden.

„*Foundering* is a rheumatic disease, in most instances caused by excessive exertion followed, in all seasons, by the animals catching cold, in consequence of its being suffered to stand a long while in a draught of air, or of its being taken to the horse-pond, or rode through cold water, this frequently renders very high-prized horses unfit for all use; causing not only stiffness and tension of the muscles and sinews, but an actual exsiccation of the articulations and hoofs."

*) In the excellent *Monographie über das Wildbad im Königreich Würtemberg, von* Dr. *A. K. Kerner. Tübingen* 1820. Not being able to speak here from personal experience, I shall quote the details of an observation made by Dr. *Hoerd,* in his own words.

„The observation, that emollient and hot fomentations were highly useful in this disease, when the inflammation had been removed, made me hope, about five years ago, that the hot baths of *Wildbad* would prove highly efficacious.“

„An english coach-horse, 14 years of age, belonging to the favourite team of the King's Majesty, was, in the winter of 1807, taken with a rheumatic fever, which occasioned a stiffness of the fore-feet.“

„The remedies sanctioned by experience, did, indeed, afford some relief, but could not subdue the disease.“

„In the summer of 1808 this horse, along with some saddle-horses of the king, labouring under similar disorders, were sent to *Wildbad.* I sent, at the same time, with a great deal of trouble, a horse, labouring under the same disease, and pronounced incurable, which belonged to count F**, to the same bathing-place.“

„Both horses were bathed for an hour, every morning and evening, whilst thermal water was kept pouring upon their upper parts. At the end of eight weeks, these two horses were completely well.“

„From that period many other horses, labouring under similar diseases, were cured by the bath.“

„The bath of *Wildbad,*“ Dr. *Hoerdt* continues, „has, besides, proved highly efficacious

in other diseases of horses, f. i. in schirrosities of the integuments of the tendons, spavin, inveterate malanders, in ulcers and eruptions in the mane and tail."

„These waters appear to resolve by means of their warmth the overflowing or stagnating humours of the vessels, and to fit them for absorption. Horses, whose lungs are affected, or who are troubled with the staggers, are weakened by these baths."

„During the first days of bathing, it will be sufficient for sick horses to bathe for half an hour in the morning and evening. About the eighth or tenth day they may be left in the bath an hour. After the bath their feet must be dried very carefully. It is adviseable to let them stand upon a litter of clean straw by day and night. In cold and moist weather bathing them may be discontinued for some days. Experience has shewn, that horses are liable to fever, when this is neglected."

„It is adviseable to pour thermal water upon the head, neck, back and crouper of these animals, whilst they are taking the bath."

„When they return into the stable, they should be carefully covered, and about noon they may be currycombed and rubbed down."

„Sound horses, that are intended for use, should not be bathed above twelve days, and only once a day, if possible, always in the evening, when they are at rest. If this be ne-

glected, their hoofs will grow too soft, the animal will soon get tired, and derive no benefit from the bath."

„It is decidedly useful both to healthy and sick horses (whilst they are bathing), when their hoofs are greased occasionally with linseedoil or an ointment of marsh-mallow."

We may conclude from analogy that the thermal water of Wiesbaden will prove useful in the following diseases of horses:

1) in the iliac passion (colic), when not proceeding from the fodder, or from inflammation, invagination of the intestines, or concretions in the latter, or strangulated hernia, but only from a cold.

2) in diarrhoea and retention of urine from rheumatism;

3) in some kinds of hematury;

4) in the mange and tetters of horses;

5) in gonorrhea and its destructive consequences.

The internal use of thermal water, by encreasing the secretions in the intestinal duct, and causing a slight diarrhoea, will produce a salutary effect in the abovementioned distempers. It will also prove salutary in distempers arising from worms, and those consensual, frequently very violent, affections caused by them.

The most convenient temperature of horse-baths is between 23° and 27° R.

CHAPTER XXI.

Diseases in which the thermal water of Wiesbaden is hurtful, or, at least, appears to be indifferent. — Observations on diseases that have their seat in the spinal marrow. When the water of Wiesbaden is useful in dropsies, and when not.

ONLY the indication and counter-indication of a remedy founded upon mature experience can enable us to form a correct estimation of its therapeutic value.

The first part of this problem I flatter myself to have solved to the best of my abilities in the preceding pages. Proceeding to the second part, in showing when the water of Wiesbaden is not indicated, I shall be more concise, partly because I need not enter deeply into the nature of individual diseases, and partly because I have already pointed out in several parts of this work, *when* thermal waters are hurtful. Before I proceed to the statement of the particular cases, that do not admit of the use of the water of Wiesbaden, I beg leave to make some general remarks.

A general scorbutic discrasy requires the use of ferruginous and not of thermal waters. Used as baths, the latter are, at least, useless — but the internal use, especially of powerfully resolving waters, will prove hurtful by exciting the secretions in the organs of digestion, which in such cases cannot but do injury. It is, however, but seldom that patients look out for assistance against the first development of this dyscrasy, or a predisposition to it, consequently the wells of Wiesbaden are scarcely ever resorted to in cases of this nature.

If, however, the scurvy be already completely formed, and the state of weaknes have made a considerable progress, the water of Wiesbaden is decidedly injurious, except in the rare instance of a complication of scurvy with infarctions, as *Kortum* *) has observed. It is here that the practical knowlege of a physician must enable him to decide.

The waters of Wiesbaden, in what form soever they be employed, are, farther, prejudicial in sores and ulcers attended with a complete scorbutic discracy, in general cachexies, not proceeding from some organic disorder that can be removed by means of a resolvent thermal water. Hence, the water of Wiesbaden is decidedly injurious in all dropsies arising from such a state.

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*) *Beyträge zur practischen Arzneiwissenschaft.*

Though the water of Wiesbaden is an excellent remedy against scrofula and its consequences, yet it proves hurtful, when this disease, being completely formed, continues in adults and is accompanied by a dissolution, or a total relaxation, of the solid parts. Should, however, mineral springs be indicated in such a case, chalybeate wells only may be resorted to with some probability of relief.

The white flux, if it be the consequence of wasted vital powers, after a course of debauchery and excesses, or of too frequent, or too quickly repeated childbirths, frequently attended with a prolapsion of the vagina, cannot be referred with any prospect of success to the wells of Wiesbaden. Such cases require the aid of chalybeate springs. When the white flux is the consequence of a schirrhosity of the uterus, or the ovary, it is incurable, and if it be attended with a hectic fever, this state can be only rendered worse by the use of thermal waters.

It will be obvious to practical physicians, that in all the cases I have mentioned just now, the use of resolvent mineral baths cannot but be prejudicial and aggravate the principal disease. It is obvious why the internal use of them must be hurtful; and the uselessness of bathing may be accounted for by the absorption of the water, whose enlivening effect is counter-

balanced, or paralysed by weakness, or want of vitality, prevailing in the whole organic system. Patients of this class are, nevertheless, frequently sent to Wiesbaden, both to bathe, and to drink our thermal water. In such cases it is our sacred duty to exert ourselves to the best of our abilities, to preserve the reputation of their regular physicians, and not to discourage the patients, who repair to our mineral springs with hope and confidence, to add aromatic and tonic herbs, iron etc. to their baths, in order to counterbalance the injurious effect of the thermal water; to aid nature by administering internal medicines, and chalybeate waters; exhorting them to divert their minds by being frequent sharers in the amusements of the place etc. and by these and similar means, our endeavours will sometimes be crowned with success.

Very irritable individuals, affected with chronic and habitual hemorrhages can bear only our weaker springs, and should carefully avoid bathing too frequently and too hot. When this condition was properly observed, I frequently had the satisfaction to see patients derive much benefit from the use of our thermal water; whereas the worst consequences ensued, whenever it was disregarded.

In idiopathic convulsions and epilepsies our thermal water has acquired no reputation. The last epileptic patient I had occasion to observe,

was a lank printer's-journeyman, aged 22 years. In his 15th year he was infected with the itch, of which he was cured expeditiously by the use of a sulphureous ointment. Being, soon after, tickled and violently frightened by a comrade, he had an epileptic fit, which, from that time, returned frequently, both by day and by night, when he was sleeping.

Some time after, his legs were affected with large suppurating ulcers, which, afterwards, turned into tuberculous eruptions, which produced a thin scurf, both in his arms and legs, which encreased with the crescent moon. This eruption had no perceptible influence upon the accesses of epilepsy.

In 1816 he bathed for six weeks; but the epileptic accesses and the eruptions only grew worse. In 1817 he bathed again for the same space of time. I had ordered some issues to be applied to his extremities, and made him take sulphur with dulcamara, upon which the eruption in his arms decreased considerably, while that in his legs remained unaltered; neither did the bath appear to have the least influence upon his epileptic fits. The greek physicians are reported to have already rejected the use of tepid baths in this disease.

When hypochondry and hysterics are characterised by a pure weakness of nerves, an indisposition and pining of the whole body, without any symptom of a local abdominal disorder,

curable by the use of thermal waters, those of Wiesbaden are either hurtful, or, at least, of no use. Bathing may, however, be expected to be highly useful, when none of the aforementioned counter-indications is perceived. When this is the case, the water of Schwalbach will be found highly useful.

In actual suppurations of the lungs the water of Wiesbaden cannot be recommanded, though I have, as observed in several parts of this work, successfully prescribed the internal use of our thermal water in scrofulous phtisics. *Fenner* of *Fenneberg* also has obtained favourable results in cases of this kind. In suppurations of other important organs the water of Wiesbaden is not indicated, when the suppuration, with a continual hectic fever, is violent, and the vital power reduced much. In cases of this kind the water of Wiesbaden, as I have observed already in another place, serves only to accelerate the general dissolution.

Hemorrhoïds of the bladder, catarrhs, and other chronical diseases of that organ, if they appear in persons given to excesses in venery, frequently resist obstinately both the most judicious efforts of the healing art, and the power of thermal waters. They frequently demand repeated bathing courses. — But when sober persons, are seized with disorders of this kind, they frequently are by bathing cured most rapidly, as if by enchantment.

When in hemorrhoïdal diseases the focus of circulation is affected, and effusions of serous humours, distension and condensation of the sides of the vessels, arthritic metastases etc. in the organs of the chest, have taken place, the water of Wiesbaden generally is of no effect in these secondary disorders. They may, however, occasionally afford some temporary relief in some accessory sufferings.

But while nature is still occupied in forming the diseases just mentioned, and the impulse of the hemorrhoïds, that are not yet extinct, is directed towards the upper parts (V. Chap. X. a. XI.), (if I may use the expression), the water of Wiesbaden arrests this irregular tendency by provoking the hemorrhoïds, or calming that erethism in some other way. The employment of baths requires, in such cases, much circumspection, and the knowledge of these diseases, which in this stage frequently are still curable, is often the best touchstone of medical acuteness.

Glandular schirrhosities, accompanied by desorganisation, schirrosities of the liver, spleen — large gallstones, jaundice and cardialgy produced by them, commonly are incurable. There are, however, individuals, favoured by a strong constitution and temper, as well as by a preceding regular manner of life, who may be saved from these desperate disorders.

The water of Wiesbaden also affords very little relief in the consecutive effects of apo-

plectic fits, consisting in effusions of the lymph in the brains or in the spinal marrow, and accompanied by a paralysis and tremour of limbs. It is well known that it frequently is very difficult to distinguish such a state, and we should be careful not to be too rash in pronouncing patients of this class incurable, when they appear to derive no relief from bathing; for it frequently happens that in two or three months after the use of the bath, paralyses and other disorders connected with them, mend, at least, and that then repeated bathing finally cures the disease, or, at least, procures a partial recovery.

Here it will be proper for me to make a few remarks on the paralysis of the legs, *being the consequence of disorders of the spinal marrow.* Three different kinds of this morbid state are to be distinguished:

1) That kind of paralysis, which arises from stagnating hemorrhoïds, or from hemorrhoïds not yet completely formed. They generally are preceded for a long time by violent pains in the back and spine. — Sometimes I perceived them to be attended even with a slight fever. Physicians are very apt to deceive themselves in cases of this kind, and frequently are not aware of the serious nature of the disease, before an involuntary discharge of urine and great weakness in the legs ensue. Though this stage of the disease is a sure symptom of

a great disorder having already taken place in the most important organs, yet it will soon be cured by means of the thermal water of Wiesbaden, if the physician be so fortunate as to make the hemorrhoïds fluid, and thus to disperse the hemorrhoïdal congestion. The internal use of large doses of thermal water must then frequently be resorted to exclusively, for some time, and bathing sometimes discontinued, lest the phlogistic state of the spinal marrow, which is not yet completely extinct, should be aggravated, and the disease renderd worse. Repeated cuppings near the spine are sometimes necessary, to remove that chronic *myelitis*. When it is ascertained that this has succeeded, a cautious application of topic baths will prove of service, whereas it might do immense injury, if resorted to too soon, or applied too intensively.

2) The second class of this paresy, or paralysis of the bladder and legs is the rheumatic one, which, as to its nature, also is *a chronic inflammation of the spinal marrow, under the guise of a rheumatism of the back and the legs.* If this be discovered in proper time, and the patient judiciously treated, he may be cured very soon; whereas *his disease may as easily be rendered incurable by an unskillful use of the thermal water of Wiesbaden.* Repeated cuppings, simple baths, flannel jackets, a frugal diet and vapour baths are

highly conducive to effect a speedy recovery. In this instance, too, an unseasonable application of topic baths may do great injury. There are, however, unfortunately, but too many physicians that fancy they must instantly put their patients to this balneotechnic torture, as soon as they discover symptoms of a paralytic appearance. I have seen, both here and in other baths, great injury result from such injudicious treatment.

3) The third class of this paralysis is caused by a metastasis of the sharp humour of a checked itch, suppressed tetters, sweat of the feet etc. This disorder requires, besides a proper regard to its dynamic character, the simultaneous use of proper specific medicines, of issues etc.

But if the paralysis be already of many years standing, the phlogistic state extinct long since, the patient be capable of moving his legs only a little, when standing, but more freely, when lying, an effusion into the integuments of the spinal marrow may safely be presumed to have taken place; the latter are degenerated, and the impulse of reproduction is frequently so totally extinct, as to have caused a considerable emaciation of the lower extremities. I have experienced *very favourable results* produced in such desperate cases, by the use of our thermal water, combined with water- and very intensively acting vapour-douches, with moxas on the *spina dorsi,* and, finally, *with the ap-*

plication to the back and *os sacrum of a plaister of colophony dissolved in alcohol, and repeatedly moistened with the latter.* Every third day fresh colophony is strewed upon the plaister and moistened with alcohol. There is nothing that can promote more powerfully the resorption of extravasated lymph in the integuments of the spinal marrow. Paralyses of the latter kind, combined with general bodily weakness, whether owing to excesses, or the consequence of illness, are not qualified for being relieved by the use of the thermal water of Wiesbaden. Patients labouring under disorders of this kind, may, however, expect to derive some mitigation from the use of the mineral waters of *Schwalbach, Pyrmont* etc.

Arthritic paralyses (not stiffness, *ankylosis*) of the articulations, having taken place in old, or very decrepit persons, and being attended with emaciation, as well as tumours, *(in such relations),* are not qualified to be cured by the use of the thermal water of Wiesbaden; they may, however, be mitigated in some degree, by a secondary treatment.

In gout attended with fever, in acute rheumatism, the water of Wiesbaden is inconvenient, while the fever, or inflammatory state, lasts. The pains and fever are augmented by the water. In short, these thermal waters do not agree with acute diseases, as has been shown already in the sixth chapter of this work.

Numerous as are the diseases in which the thermal water of Wiesbaden is generally known to afford relief, yet it is evident, that there may be many forms and modifications of them that do not allow the use of it; and an enumeration of the counter-indications alone would furnish materials for a volume. Let us suppose, f. ex. a spare, worn out man, who, as it frequently happens, has taken large doses of mercury, and whose assimilating powers are reduced very much, whose skin is relaxed, and who is put into the most violent perspiration by easy exercise, to have the gout in his head etc.; such an object will not be cured of the latter disorder, before his body has gathered strength again, and the functions of digestion and assimilation are restored to their natural state. But as the outlines I have given in this book will render it easy for any one, to form a proper judgement of such cases, I shall not dwell more largely on this subject.

Persons that have the misfortune to be disposed to *Phthisis florida,* distinguishing themselves by a consumptive structure of body and a disposition to hemoptysis, and who, perhaps, already feel sometimes stitches in their chest, may not expect to derive any relief from the water of Wiesbaden. If, however, persons thus disposed should happen to resort to our baths for the purpose of being cured of other disorders, they should make use only of the water

of the weaker springs, and observe the utmost precaution.

What Dr. *Heidler,* in his fine monography, reports of *Marienbad,* may be applied almost literally to Wiesbaden. He says: „These waters are not to be recommanded to persons of a relaxed phlegmatic constitution, nor in dropsy, or in a disposition to it, nor in the whites *(fluor albus),* pituitous phthisis, nor in a disposition to hemoptysis and diarrhoea owing to a *general weakness* of the body. If, however, these disorders do not arise from actual weakness, but from an improper regimen, from an immoderate use of strong liquors, a sedentary mode of life, infarctions, worms and other causes interrupting the circulation in the abdomen" — the water of Wiesbaden, combined with a proper regimen, will be found useful.

Sterility from bodily weakness, from an actual deficiency of vitality, is qualified only for chalybeate springs. Dropsies regularly are no fit objects for the thermal water of Wiesbaden. In abdominal and cutaneous dropsies, combined with fever, whatever might have been their original cause, I have found this bath to be *hurtful.*

It was but in the latter years, that two cases came under my observation, which appeared to me qualified for the use of our thermal water, and now encourage me to prescribe it frequently in this dreadful disease though in

one instance the treatment had a fatal issue, which was not, however, owing to the water.

A woman, about 43 years old, after she had been sickening a long while, was, from causes not satisfactorily ascertained, taken with a dropsy of the abdomen and the lower extremities, after she had been for a considerable time affected with a hectic fever. She did not appear to labour under any organic disorder of the abdomen. Several eminent physicians had treated her without success for some time, when the last of them at length sent her to Wiesbaden. I confess that the communication I received from my worthy colleague, perplexed me very much, and that I did not venture to recommand *bathing* to this unfortunate object, who scarcely could drag herself along, and was almost worn out by her hectic fever. I only ventured to direct her, after a few days' rest, to drink every morning about six ounces of the water of the *Kochbrunnen*. These six ounces, however, procured her immediately such copious discharges by the stool and urine, as made me apprehend, that this hypercrisis would prove fatal to her. She could scarcely leave the closestool for a moment, and I was obliged to take all possible pains to save her life from the consequences of these alarming discharges. In about eight or ten days her cutaneous and abdominal dropsy disappeared entirely, and there remained only

a great debility with a small and quick pulse. She now unfortunately took it into her head, to meet her husband, who was returning from a journey. The evening being cool, she caught cold, and on the day following, St. Anthony's fire, which, in a situation like hers, is invariably dangerous, showed itself, spreading irresistibly over her abdomen and legs, and cutting asunder the slender thread of her life. —

The following case had a happier issue:

A girl, 13 years of age, had been subject from her infancy to excessive secretions of the pituitous tunic of her nose, which, when it ceased, was followed by general indisposition, which left her only with the return of the discharge from her nose; though she was ever very thin and of a pale complexion. In the summer of 1820 she was frequently tormented with toothake and paronychia (whitlow), *during which the secretion in her nose invariably ceased* — phenomena which were imputed to her extremely cold bedroom. She grew uncommonly melancholy, for which no one could account. In Dec. 1828 she was taken with a violent catarrh, and four weeks later her abdomen was for the first time observed to tumefy, against which vermifuges, purgatives a. s. f. were given, until it was ascertained that she was affected with an abdominal dropsy. Two other physicians were now consulted, who in the course of 21 months exhausted the whole

store of antihydropsics. The patient arrived here in Nov. 1830. The circumference of her abdomen was very great; she had a hectic fever, and suffered the torments of an unquenchable thirst; her complexion was of a yellow hue, her appetite and digestion still unimpaired, though her body was in a state of great emaciation. Thus circumstanced, her menstruation was obstructed of course.

I soon gained the conviction, that her case was not likely to be mitigated by the use of medicines; neither did the blisters, which I directed to be put on her abdomen, in order to stop the secretions of her abdominal tunic, produce the least visible effect. The circumference of her abdomen, together with her general weakness had in the meantime encreased to a degree that rendered her respiration very difficult, and rarely permitted her to leave her bed. Being tapped, 352 ounces of straw-coloured water were drawn from her. After this operation her appetite began to mend; but her abdomen was swelling again immediately, whilst the tumefaction of her legs had decreased, as it commonly happens. It was, therefore, to be expected, that a second operation soon would be unavoidable.

I now directed the patient, whose hectic fever and thirst still continued, to drink every morning, before breakfast, six ounces of mineral water, as warm as she could bear, and to raise

the dose by degrees to 18 ounces. At a later period she also drank a few cups at 11 o' clock in the forenoon and at 6 o' clock in the afternoon. This was followed by a more copious discharge of urine, and of some liquid stools, whilst her skin, which from the fifth day had been parched, began to moisten. Her appetite, too, improved considerably. Having continued the internal use of our water for a fortnight, the circumference of her abdomen had decreased visibly, her thirst and hectic fever had moderated, and she gained strength in a short time.

Not the least accumulation of water was perceived in February. She continued drinking the mineral water till March; and at present (June 1831), whilst I am writing this, she is more vigorous and better in health than she ever was before. The unnatural mucose secretion from the nose, which had troubled her from her infancy, ceases entirely. She is, however, still without menstruation, though in her sixteenth year *).

I have not yet had an opportunity to observe any remarkable effect of the water of Wiesbaden in diseases of the bones, characterised by a disorganisation of their texture, tu-

*) An account of the cure of a dropsy by means of the thermal water of Wiesbaden, is given in the *Acta societatis naturae curiosorum.*

mefaction, or an unnatural hardness. I believe, however, to have perceived a diminution of callus after fractures*); neither is it a rare case to see hard tumours diminish and disappear, after the use of it.

But how frequently are tumefactions of the periosteum mistaken for swellings of the bones! Such periostoses I have often seen cured by means of general- and topic baths, though they had been of long standing. Dr. *Kortum* develops extremely well in his valuable work on the springs of *Aix-la-chapelle*, the counter-indications of vapour-baths. What he says on this subject, which I shall quote in his own words, is perfectly applicable to the thermal water of Wiesbaden.

„Vapour baths are insufficient, nay even hurtful in all disorders, in which weakness, relaxation of the solid parts, excessive sensibility of the nervous system predominate, — in paralysis, hysterics, hypochondry and melancholy — in oedematous ulcers, and both in incipient and declared dropsies**). This water

*) The first months subsequent to the use of the thermal water must decide this.

**) I believe that a recent cutaneous dropsy *(anasarca)*, not attended with fever, proceeding from rheumatic causes, may be cured by vapour-baths in robust constitutions. I cannot, however, refer to my own experience, to make good this supposition. P.

is dangerous to persons disposed to apoplexy, on account of its heating nature, tending to make the blood mount towards the head; patients thus disposed, whilst in the vapour-bath, are seized with a humming in the ears, resembling the flapping of the wings of a windmill, and run the risk of a fit of apoplexy.

In chronical and periodical cephalalgies, vertigoes etc. great circumspection must also be used in resorting to the vapour-bath, as well as in cases of actual plethora, or in congestions of the blood towards the head. Prudence requires that the patient, in such cases, should submit to venesection, have leeches put to his temples and taken cooling medicines and gentle laxatives, before he is permitted to use the vapour-bath."

CHAPTER XXII.

Description of the mode of life commonly led by the visitors of the wells of Wiesbaden. Dietetical and psychical influence of the resort to watering-places upon the recovery of patients.

It is owing in a great measure to the enlivening influence a temporary residence at some watering-place exercises on the mind of the visitor, that the most successful results are obtained there, which the best endeavours of the regular physicians scarcely or never were able to effect at home.

How often do we fruitlessly employ all the aids which our art affords, against diseases excited and nourished by domestic vexations — by the passions of the mind! How many opportunities have we in our practice to convince ourselves, that individuals who were struggling for years for the recovery of health, could not get the better of their disorders, because they could not take a *firm resolution* to get well! Whenever they seriously attempted, to oppose a tranquil indifference to their unfortunate

domestic situation, and its destructive influence, to banish from their mind the corroding cares, they were immediately borne down again by the fatal presence of hostile circumstances, and additional links were joined to the chain of their sufferings. Thus situated, the unfortunate sufferer is completely disheartened, his disease becomes a melancholy habit, of which he cannot disencumber himself. Thus a mental disease is engendered by his physical sufferings; both are in close alliance, and prevent his recovery. No skill of the physician is capable of solving the gordian knot that links them together. At length the unfortunate sufferer learns that others, who equally overwhelmed with heavy sufferings, were relieved at some watering-place; a spark of hope cheers the gloom of his disconsolate mind, and rouses it from its lethargy. The hope of regaining his health by the same means, inspires him with new courage. He now begins to pay less regard to light sufferings, to bear up with heavier ones, and the stormy passions are appeased. Life presents to him a fairer side; his imagination anticipates the pleasures promised by the projected journey to the watering-place, the amusements and diversions he expects to find there, the return of health etc., and thus his mind regains its former elasticity, and the principal obstacle that so long opposed his recovery, is removed.

The physician, that intends to send his patient to some watering-place, will be prompted by his knowledge of the intimate connexion of body and mind, to call forth this disposition in the sufferer committed to his care, to encourage it, and, when the cure is successfully completed, to endeavour to prevail upon him constantly to keep in view the true scope of human life, the only means by which his health can be consolidated and a proper harmony of body and mind established. But, when arrived at the watering-place, how beneficent will be the impression made upon his downcast soul by the free and social manner of life prevailing at those places! Wheresoever he appears, he excites compassion; feeling souls do not hesitate to visit him in his solitary chamber, to console him, and to inspire his mind with new hopes.

Persons not labouring under serious disorders, such as men of business, who purpose only to repose from the fatigues with which the performance of their official duties is attended, and to partake of the amusements afforded by bathing-places, the man of letters who takes refuge to them for relaxation from his serious studies; the tender mother, resorting to them to obtain relief for a beloved daughter — all these have disengaged themselves, as much as possible, from the trammels of their professional and domestic occupations and relations,

and enter this new world with renovated spirits. The cheerful and gay life of a bathing-establishment presents to all of them charms with which they were entirely unacquainted before. Individuals of all ranks, gathering there from neighbouring parts and the most distant countries, united there within narrow confines, mostly for one and the same purpose, meet for the first time in that motly assemblage, and also hail each other, perhaps, for the last time, for a long series of years. This variety, this contact of individuals, frequently distinguished by high rank and eminent talents and accomplishments, enhances the charms of indiscriminate social intercourse, and adds an additional value even to the patient's solitary hours, as I have frequently experienced myself, by ushering in the dawn of a happier futurity.

The variety of interesting objects that present themselves to his view, attracts his attention, and occupies his eyes and imagination, and kindered spirits find many opportunities at watering places to meet and to form familiar connexions. A common purpose, the same society, the participation of the same amusements and pleasures facilitate the formation of many interesting connexions. The opportunities of mutual intercourse are numerous; the social meetings are not hampered by the trammels of ceremony, and we readily acknowledge and enjoy mental and social talents wherever we meet with them.

The patients meet early in the morning on the public walks and at the wells. There they interchange their wishes and hopes of recovery. Many are on the eve of returning health; and, encouraged by the improving state of convalescents whom they daily see, or by the perception of encreasing strength, feel themselves elated with the pleasing hope of experiencing in their own persons the successful results of bathing they behold in others. New hopes awake in others that are still groaning under the burden of severe and painful disorders, when they hear many of their acquaintances bless the beneficent spring that has restored to them health and the faculty of enjoying life.

Here plans for the amusements of the day are discussed, appointments for shorter or longer excursions made, according to the strength and inclination of each individual, and these excursions, this enjoyment of the open air contribute a great deal to heighten the salubrious efficacy of the wells. A cheerful mind exercises the most happy influence on the body, and who could indulge his melancholy bent and remain a cool observer amidst the charms of nature and in the society of persons that are endeavouring to enjoy them?

Now the patient takes the bath, and is happy to remain in the congenial fluid, to which earth communicates her vital warmth; he feels himself strained more closely to the bosom of

our common mother, whilst he is surrounded by the salubrious liquid, issuing from her womb, and joyfully presages the tendency of her mysterious powers.

After the bath the patient regularly indulges himself with a few hours of rest, which affords him additional enjoyment. He notes down what he has seen and heard, reads, writes, or directs his steps to the colonnade of the *Cursaal* (pump-room), where a select band of performers on windinstruments gives an additional zest to the charms of the morning hours, until the company meet in the dining hall, where they sit down to a comfortable dinner, seasoned by the sweet sounds of excellent music.

Happy would it be if temperance and a sensible conversation did ever characterise these meals, and if all would be mindful, that the offended Najade severely punishes all kinds of excess, by which the strict regimen she requires, is profaned!

In the afternoon the plans formed in the morning are executed, each patient trying the strength he has regained, and in the evening the lovers of dancing repair to Terpsichore's temple, whilst others spend the evening in one of the parties that are formed in every bathing-establishment. After the fatigues of the day, a balmy sleep, which is interrupted no more by restlessness, improves the encreasing strength, and the dreams that formerly were

the mirrors of a melancholy reality, are superseded by cheerful sports of fancy.

These are the general outlines of a life that may be led at a much-frequented watering-place, and by many is realized in a shape still more pleasing and refined. The great diversity of enjoyments that may be procured at these places, allots to each as much as he may want, and sometimes even more than many a one desires.

Places that realize such various ends and supply the most essential wants, are to be reckoned among the greatest benefits of nature, and it is undoubtedly none of the least improvements of modern times that the thermal establishments and mineral springs of ancient times have been revived in an highly improved shape. If we cannot boast of halls as grand as those built by Titus, Diocletianus, Constantinus and others, for the use of the Romans, at the expense of conquered nations, our watering-places may neither be said to be places of public resort for abandoned sensualists, nor the ruin of national virtue. They are genuine salutiferous establishments, founded on scientific principles and corresponding with the demands of our age. Most, if not all, of these establishments have a genuine therapeutic tendency, and are to be asylums for mental and bodily sufferers, for the relief of whose ailments all the regulations that distinguish them, are especially calculated.

Considering this, every reflecting observer will easily conclude, how it happens that the blessings of health are here regained by numbers that could not be cured at home even of disorders less severe than those that induced them to repair to watering-places; he will not hesitate to put to the account of the manifest advantages these establishments offer to patients of all classes, their retreat from domestic relations and cares, that frequently render abortive all mental efforts to conquer their disease, as well as to the favourable external relations, into which the sufferer is placed, and which, under the auspices of an intelligent and experienced physician, are highly conducive to raise the sunken faculties, and to renovate the decaying constitution of the poor sufferer. Thus then the external mode of life of the patient is made perfectly to correspond with the manner in which bathing acts upon the body (Vid. Ch. 17.), and in the most successful cures it will manifestly appear, that the thermal spring and the regimen the patient was made to observe, jointly contributed to the reestablishment of his health.

The observer will, farther, take account of the state of mind, on which frequently the cure of *certain* disorders *chiefly* depends, and which exercises a decided influence on diseases of *all* kinds. Bodily sufferings, apparently trifling, frequently defeat the endeavours of the most

skillful physicians, and sometimes rise to an alarming height, without our being able to discover the least bodily cause of it; yet we commonly perceive the coexistence of some mental indisposition, of some internal uneasiness, and a sense of a spiritless, inane existence, devoid of a vital centre. Such a state of mind engenders melancholy, and generally at the same time, physical disorders are oftentimes developed that defeat all efforts of medical skill for many years.

Such patients change their physician every instant, frequent all mineral springs, and nowhere find rest nor health; and when they, perchance, regain their tranquillity of mind and health, they frequently attribute their amendment to some insignificant prescription, to some specific, or to some mineral spring of no repute. I recollect on this occasion the remarkable case of a very sensible jewess, who had been paralytic for ten years, and liable to violent convulsions, and, at length was cured in so singular a manner. The celebrated physicians *Stieglitz, Brandis* and *Marx* have given us an account of her illness. Dispiriting disorders, fruitless attemps to recover the lost health, impress the mind with the persuasion that the disease of the patient is incurable, and make him despair of deriving any assistance from medical skill. Or, if some fortunate impulse happen to revive the *belief* in the possibility of the patients re-

covery, and dispose him to undertake, not without many sacrifices, the journey to some mineral bathing-place — who then can calculate the effect of such a disposition upon the organism, and the degree of the excitability of the vital powers? *)

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*) *Brandis* observes in his excellent work: „*über psychische Heilmittel und magnetische Kraft*“: But to whom is it given to comprehend the entire mental power of this word (faith); who, when capable of comprehending its import, can find words adequate to communicate their perception to others? The experience of eighteen centuries has taught us that it cannot be expressed by words, nor communicated by the aid of letters.“

That man, in a state of faith, is by no means in a passive condition, is very well demonstrated by the acute *von Baader*, when he says: „for that he that truly believes, does not question the happy result, implies no more than that he divines it; and if he be required not to doubt of it, this again proves only that the believer does not merely presage and observe, but partly contributes to realise it. He is not, indeed, required, that he should be obstinately tenacious of this divination, which is not of his own procuring, and maintain it by his actions, in spite of all subjective and objective obstacles etc.“

But let us not generalise too much this idea, by putting to the account of the mode of life prevailing at watering-places, and to the patients' faith, what in most instances is owing to the efficacy of thermal waters, a mistaken notion that was entertained already in former times. At a period when

May this suffice, to set forth the great value of a suitable regimen, and the proper disposition

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the bathing establishments and watering-places of Germany were yet in their infancy, this partial view was already properly rated in the Monography of Dr. *Speth,* who has deserved well both of our bathing- and charitable establishments (4th Ed. of 1761, enriched with excellent additions by other physicians): „Let us only consider", he says among others (p. 114—117.) „that our establishments intended for the amusement, comfort and diversion of the visitors of our wells, are still wanting many and very essential improvements; we should, consequently, wrong very much the individuals resorting to them, if we were to impute their motives to visit them only to a desire to partake of the amusements and pleasures they expect to find there, especially, as those diseases that demand bathing, for the most part are of a nature that rarely allows the patients to withdraw to any distance from the bathing establishment, nay, only to leave their apartment. A patient that passed three weeks, along with many fellow-sufferers, in a strange place, amidst a variety of inconveniences, and took the air in the window or in a small kitchen-garden; who, besides, has been tormented all the while with swallowing larger or smaller quantities of water, and dragging himself into and out of the bath, does not think of amusing himself in public. This reproach, surely, cannot be made even with a shadow of justice to persons, who, during their stay at the watering place, at most, could indulge themselves with a few pleasure-rides, whilst their mind was occupied with calculating the great expenses of their stay, and the hours they might, perhaps, have to

of mind that should attend patients, when they go to watering-places.

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remain in their captivity: and, at last, quit the bath with downcast spirits, because they have experienced no manifest benefit from the use of the thermal water, though they are blessed at some future period with a complete recovery. We say, that with such persons the mode of life, the amusements and diversions prevailing in bathing-places, cannot, surely, have any share in their posterior amendment or recovery; we rather may justly conclude, that they are indebted for their recovery only to the powerful influence of the thermal water, and the paternal blessing of the Supreme physician in Heaven etc."

CHAPTER XXIII.

Choice of the season most proper for using the water of Wiesbaden; conveniences for bathing there in winter; — Is a preparatory treatment required previous to the use of that water? Requisites wanted on a journey to watering places; — how was the water used both externally and internally in times past? How ought one to drink, and how to bathe in it? Rules for bathers and drinkers; employment of medicines during the treatment. — A few words respecting the necessity of a strict regimen.

Observation teaches us that changes take place in the interior of the earth, in spring, highly deserving our attention, and also manifesting themselves partly at watering-places. It has been known long since that several carbonated and ferruginous mineral waters in spring recover their entire power, which they insensibly lost in autumn and winter. If this observation be allowed some reasonable influence upon the use of such ferruginous mineral springs, it is not to be esteemed a rule for the time at which patients should repair to such thermal springs, as have *not*, as yet, betrayed manifest pheno-

mena of this kind. Now, since the power of the spring is not to be taken into consideration here, the disease itself only must be taken as a standard for regulating our choice of the most suitable season.

The site of Wiesbaden at the southmost frontier of Germany, the shelter which a long ridge of mountains affords to great part of the country against the cold north- and north-east winds, are very favorable to the early arrival of the vernal season. This circumstance, together with the judicious arrangement of many bathing establishments, caused these baths already in ancient times to be resorted to in a much earlier part of the year than other german watering places.

Besides the delight, which great numbers derive from beholding nature in the charming vernal season, when she is arrayed in her gayest attire, the place itself affords to patients the most desirable advantages; for instance, greater tranquillity, more conveniences, the choice of apartments, better attendance etc.

There are others, whom the nature of their disease obliges to repair to the mineral springs as early as possible. Diseases followed by paralysis, rheumatism etc. gouty affections that threaten to turn into disorganisations, assume a more alarming character, the longer these secondary disorders are neglected, and they frequently are rendered incurable by a too tardy

application of the proper remedy. The vital powers are most vigorous in spring, and revived with greater facility by the impulse of the thermal water, than at a later period. Disorders that would be cured very soon at that season, prove very obstinate a few months later. Aged persons, in particular, labouring under the consequences of apoplexies, should avail themselves of the greater activity of the body in the vernal season, and repair early (though not in cold weather) to the watering place.

Both these diseases and other complaints, known to physicians, frequently require repeated returns to the bath. Such as have completed the thermal treatment in spring, will have the advantage of being enabled to attend leisurely to the consecutive effects of the bath in summer; if the exaltation of the vital powers should cease after the lapse of some months, a repetition of the thermal treatment in autumn, will deliver them completely from a disorder that in winter, perhaps, would have grown incurable, or, at least, at a later period, would have required a longer stay at the wells.

Patients intending to avail themselves with advantage of the water of the chalybeate springs, for the most part situated towards the north of Wiesbaden, and previously have occasion for a resolvent mineral water, should take care to arrive here in the beginning of June at latest. It is not, however, in all instances adviseable to

make use of chalybeate water immediately after a treatment with a thermal resolvent. Entire weeks must sometimes be suffered to elapse, before a ferruginous water can safely be taken.

All patients intending to make use of thermal baths with a view to exterminate dispositions to certain cutaneous or inflammatory diseases, for instance, to erysipela in the face, or to squincy, should repair in good time to the thermal springs (though never in cold weather), as they will prevent thereby the greater sensibility of the skin, produced by bathing, from coinciding with the cool autumnal season.

Some patients find it necessary to repair for relief to thermal springs already in winter, and the progress art has made in the construction of baths, in Germany, justifies the supposition that the thermal bathing-establishments, should have been carried to such a degree of perfection, as will allow patients to avail themselves of them in all seasons of the year.

At Wiesbaden there are several houses fitted up purposely for the convenience of bathing in winter. „These establishments", the medicinal counsellor *Wetzler* says *), „are particularly

*) *Zusätze und Verbesserungen zu den zwey Bänden der neuen Ausgabe des Werks: Ueber Gesundbrunnen und Heilbäder, von J. E. Wetzler etc. Mainz, bei Kupferberg,* 1822.

well adapted for bathing in winter, in rheumatic, gouty, abdominal and similar disorders; for some of their apartments are not only fitted up exclusively for winter-dwellings (though the majority of the other rooms are furnished with stoves, and, consequently, habitable in winter), but there are also several bathing closets that can be heated, whilst all anti-rooms, passages and staircases of the house are carefully closed, and do not admit the least draught of air. If required, patients may also bathe in their dwelling-rooms."

In 1812—1815, when the bathing-establishments did not possess the conveniences for bathing in winter, which they now are provided with, there were some hundreds of bathers here in that season, and ever since I have been practising here, there were always many patients here in winter, who very successfully made use of our thermal water, and I do not hesitate to protest that I never have experienced any sinister accident being the consequence of bathing in that season *).

*) *J. J. Jünken*, a physician of *Francfort*, well-known by his chymical writings, published, in 1715, the following observation on Wiesbaden: „These baths are also very convenient to such as intend to bathe in winter, witness the instance of a well-known colonel, whose hands were paralysed, who arrived here, from Catalonia in January, and made a very successful use of our baths." (*J. H. Jün-*

It frequently happens that numerous strangers are here already at the latter end of Apr. (if the vernal season be anyways favourable), though the great bulk of visitors do not arrive before the middle of May, and that many bathing-establishments are not deserted before the end of October.

The majority of patients need not prepare themselves for making use of the waters of Wiesbaden. Venesection is frequently required, when the patient is of a plethoric habit, or disposed to apoplexy. Such as are disposed to inflammation or to inspissation of humours *(spissitudo humorum)*, will do well if they previously drink a proper quantity of whey daily, for some time. Patients that are severely affected with infarctions or hemorrhoïds, will considerably abridge the time of their stay here, if they drink the thermal water of our springs, before they repair to Wiesbaden *).

It is of great importance not to be in want, during the time of bathing, of any necessary of life or convenience, the privation of which might expose the patient to the risk of missing

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ken's kurzgefasste neue Beschreibung der uralten hochgepriesenen warmen Bäder in Wiesbaden. Bei Andrae, 1715. p. 13.

*) I shall take great pleasure in seeing every order for our mineral water executed. Application for it may, however, be made to the proprietor of any known bathing-establishment.

the object of his journey to the wells. Dr. *Wetzler* very justly urges the high importance of this point, and some proposals of his relative to it, will be found to be here in their proper place:

„All patients", he says *), „repairing to a watering-place, should be sufficiently provided with warm clothing; for the skin is, in many diseases, very sensible, and the air is frequently, in the morning and evening, especially after a thunderstorm, too cool for bathers, who run the risk of catching cold, if clad too thinly. They should be provided with bathing-clothes made of flannel, especially with long worsted drawers and a morning-gown of the same material. The former should be put on, the instant the patient gets out of the bath. A great-coat will, however, serve the same purpose as a flannel morning-gown. Thus the patient is not liable to catch cold after the bath. The long drawers will also be very serviceable to ladies, who, moreover, should not neglect to provide themselves with warm drawers, under-pettycoats and mantles. Bathers should likewise be furnished with linnen or cotton sheets of their own, to wrap themselves in after the bath. Such as are in want of a night-lamp or a syringe for clysters or injections, should provide themselves with these

*) L. c. p. 202—205.

articles at home. A spunge, a soft brush, for frictions in the bath etc. will also be found very serviceable, and frequently be wanted. All persons going to watering places, finally, should provide themselves with more money than they may reasonably expect to want, lest unforeseen expenses should oblige them to quit the wells before they are completely cured."

How is the thermal water to be used externally and internally?

It is interesting to know in what manner the water of Wiesbaden was used formerly externally or internally, as the case of the patient seemed to require. According to the most ancient monographies, the water was already some centuries ago either drunk before bathing, or it was drunk without bathing, and *vice versa*. These monographies (f. i. that of *Hornigk*) contain directions respecting the manner in which the water should be used both externally and internally. Bathers gradually prolonged their stay in the bath from two to three hours; the water was drunk, partly by way of a digestive, in doses of from one to two pounds, and, partly, by way of a laxative *), which was done every third or fourth day, patients commonly combining thus both modes of drinking. The water was, in consequence, drunk from one chopin to three

*) Or, as they say, for moistening the body, or mollifying the hardened parts.

rhenish quarts, or 192 ounces. It must be allowed, however, that only very torpid constitutions were capable of bearing such large doses, and physicians could prescribe them only in times, in which the whole medical treatment chiefly turned upon excessive evacuations. In obstinate abdominal disorders the water was drunk for 3—6 weeks, when a laxative concluded the treatment.

In other diseases (in those of the head, chest and articulations, as we are informed by Dr. *Speth,)* patients were made to drink the water immediately until it began to purge; then they drank the water of Schwalbach or Selters, commonly for four days, encreasing the dose gradually from one to six pounds. On the fifth day the water of Wiesbaden was drunk again, until a diarrhoea ensued; and this treatment was continued, until the intended purpose appeared to be effected, when these carbonated waters were gradually taken in smaller doses *).

*) Another very reprehensible method of drinking the thermal water of Wiesbaden, mentioned by Dr. *Jünken,* seems to have been in use formerly. He reports, that, according to tradition, people fancied, that copious quantities of tepid water must be swallowed (even from four to five quarts) until it forced out its way upwards and downwards. He cautions all to whom their life is dear, to abstain from this practice. He also objects decidedly, upon chymical principles, to the practice of alternately drinking the waters of Schwalbach and Selters along with that of Wiesbaden; adding, however, that it had agreed pretty well with several patients.

The faulty practice of drinking alternately ferruginous water along with that of Wiesbaden, has been abandoned in latter times, and it happens but rarely that the patient's state requires such considerable doses of thermal water as used to be taken formerly. Dr. *Hufeland* very properly denominates this method an artificial inundation of the stomach and intestinal duct. It should, besides, be observed, that the attempts to produce by such enormous doses a resolving effect are completely abortive.

In obstinate abdominal diseases, I think myself, however, sometimes justified in directing the patient to drink the thermal water for some days in small doses, and afterwards in larger ones, that have a gently purgative effect. Yet I am far from recommanding this method as a general rule. The majority of cases demand that the secretions in the more important vascular organs should be excited, for which purpose the water must be absorpt; this is, however, effected most safely by drinking the water, at first, in smaller doses, and raising these gradually from about $^3/_4$ to 2—3 rhenish chopins, — or from one to four, and in uncommon cases, to six pounds. The thermal water, drunk after this manner, acts at the same time upon the renal and the cutaneous systems, preparing crises by means of these organs.

Patients regularly drink the thermal water fasting, and before taking the bath. Such as are

used to rise early, drink it early in the morning, walking, at the same time, in the open air and conversing with their acquaintances, if the state of the weather do not prevent it.

But this exercise should not be continued until the patient is tired too much and overheated. He should sit down occasionally (for too violent exercise, whilst the water is drinking, weakens individuals of an irritable constitution for the whole day), suffer an interval of ¼ hour to pass between each cup of three or four ounces. Neither should such a cup ever be emptied at one draught *).

Some patients drink the water a second time against evening, about four hours after dinner, though in a smaller quantity than in the morning. At that time it is also drunk less warm, lest it should make the patient perspire too much, and thus disturb his rest.

Many patients will derive great benefit from drinking the water as warm as possible (sometimes even in bed); for instance, in gouty affections, if the cutaneous functions are too languid. Other patients find it more convenient to drink it only lukewarm. Mixed with

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*) „Insignificant (says Dr. *Osann* in his excellent *Monographie über Kaiser-Franzensbad)* as this rule might appear, it is very important, inasmuch as the observation of it makes it sit lighter upon the stomach, and more digestible."

a little milk, it will prove more palatable to many individuals *).

Such persons, too, as drink the water of Schwalbach, Selters, Fachingen, Geilnau, Weilbach etc. instead of that of Wiesbaden, regularly are directed by their physician, to drink it before bathing.

Half an hour after the patients have drunk the thermal water, they usually breakfast. They commonly take a cup of chocolade, coffee, eggmilk, or broth with the yolk of an egg. The less nourishment is taken between bathing and drinking the thermal water, the better will it agree with the patient, and persons of a weak constitution aught to take only half a breakfast; such as are capable of abstaining from food until after the bath, should defer taking any to that time.

If you have taken food of any kind, after you have drunk the usual quantity of thermal water, you should let half an hour pass before

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*) The rules for drinking the water by persons living at some distance from the spring, have been pointed out already in Ch. XI. Dr. *Jünken* says, in his treatise quoted in a former place: „This thermal water is sent to very distant parts, for the purpose of being drunk, as it happened last summer (1714), when Her Majesty the queen of England caused some thousands of stone bottles of it to be conveyed by a servant, partly to Hannover, but mostly to England."

you take the bath. Going into the bath, when heated, or in a violent perspiration, is hurtful at all events.

Persons taking a whole bath, should immerse themselves into the water only by slow degrees up to their neck, having previously washed their chest and abdomen with thermal water.

When you are seized with headake or vertigo, whilst in the bath, it is too hot, and you must get out of it instantly.

Baths in which you perspire, are too hot, spoil the appetite, weaken the patient, and put him out of humour all the day. There are, however, instances of their producing secondary salutary effects, when they may be taken as exceptions from the general rule, though only with the approbation of the physician.

All baths, even those of common water, sometimes cause a sensible congestion of blood in the head. When this is the case, the head should be washed with cold water, or a cloth moistened with it put upon the front and the crown of the head during the bath. There are, however, also instances, in which this may not be permitted.

Such as take only half-baths, require a bathing-cloak, to protect the upper part of the body against catching cold, while bathing.

Patients should be particularly careful not to suffer themselves to be overcome by sleep

in the bath, and quit it instantly, when it announces itself by vertigo, heat in the head, and tinkling in the ears. Neglect of these symptoms is liable to occasion fits of apoplexy.

But when sleep succeeds a bath that was *only lukewarm* (for falling asleep after a *hot* bath must be carefully avoided at all events), and no symptoms of congestion of blood in the head are perceived, the patient may safely yield to this impulse of nature. He will awake cheerful and refreshed; whereas he will be out of spirits all day, if he resists *that* inclination to sleep. The same inconvenience will take place, if the patient studiously *invites* sleep, after the bath. I have dwelled already in a former part of this work on this subject, which is so frequently misunderstood.

When in the bath, it is absolutely necessary for many patients to call in the aid of gentle exercise, such as rubbing with flannel, spunges, or flesh-brushes. Persons afflicted with palsy or chronic rheumatism, should be rubbed with the hand of an attendant, champoed, or made to stir about.

Fixing the temperature and duration of the bath (from 15 minutes to 1½ hour) must be left entirely to the physician's judgement.

Patients having occasion for topical baths, should be provided with a cloak, and have the douche applied before they immerse their whole body into the water. Numerous colds are the

immediate consequences of neglects of this precaution.

There are many persons that take two baths a day; the second should not, in this case, be taken sooner than four or five hours after dinner.

All patients require some repose after the bath. In cases demanding gentle perspiration after the bath, the warmth of a bed will be necessary for that purpose.

Such as bathe in winter, should not go into the bath before six o' clock in the afternoon, and then remain in their apartment *(Hufeland)*. All bathers should empty their bath themselves, or have it emptied in their presence, this being the surest way to avoid the inconvenience of making use of a bath prepared for some other person, or of bathing in the same water a second time.

Patients making use of topic (douche) baths, will render them more efficatious, if they cause the diseased parts to be rubbed at the same time. I must, however, observe that these baths are injurious in cases of inflammable sensibility, and should not be taken before the latter is removed. The physician only can judge, whether these baths are to be taken more than once a day, and how long they are to last each time.

General mud-baths of sinter-soap (particularly useful in obstinate cutaneous eruptions, con-

tractures — paralyses) may be protracted from half an hour to one hour and a half, without causing any inconveniency. When the patient has quitted the bath for some hours, the upper clearer part of the water is taken off, and fresh thermal water added. Before the patient bathes again, an additional quantity of sinter-soap is put in; commonly half the quantity that was put in the first time. The bath having been used twice or thrice, the whole of it is drawn off.

Topical mud-baths may be employed several times a day.

During the monthly courses and a sudden hemorrhoïdal flux, bathing must be discontinued, and the thermal water drunk in reduced doses. Rare exceptions from this rule must be determined by the physician.

Vapour-baths are to be used with the utmost precaution, and what Dr. *Kortum* observes respecting them, when speaking of the thermal waters of Aix-la-chapelle, is completely applicable to Wiesbaden.

In congestions towards the head, venesection or the application of leeches should regularly precede the use of vapour-baths.

Some baths of common water are regularly taken previously, for the purpose of cleansing the skin, and disposing it for the function of perspiration. Some times the vapour-bath is

taken by itself, but in most instannces on the intermediate days, alternating with general mineral- and douche-baths.

Whole vapour-baths are taken from 5—20. minutes, their duration being carried to the latter point by very slow degrees.

If the patient's head, while bathing, should feel heavy, and a palpable beating of the arteries and oppression of the chest be perceived, he must quit the bath instantly.

In cases of febrile affections and great weakness, vapour-baths are hurtful, and never may be taken without the physician's approbation.

Immediately after the bath the patient is to be wrapt in warm sheets, to lay himself down in a bed well aired, for at least one hour, until the perspiration subsides, when he may put on warm clothes and repair to an adjacent apartment, not exposed to a draught of air.

After a vapour-bath the skin grows considerably more sensible, than after other mineral baths; which renders it absolutely necessary that patients should be particularly careful in their dress, and avoid exposing themselves to a cool air. On this very account vapour-baths should not be taken when the air is cool and rough, though the hottest summer-days are also unfavourable, because delicate constitutions are then very liable to excessive perspiration. A late hour in the evening is, consequently, also very improper for taking vapour-baths, because

patients are then in great hazard of catching cold, or run the risk of perspiring all night, and thus being disturbed in their sleep.

Persons, however, that do not easily perspire, may, before using that bath, drink some cups of warm thermal water, or elder-tea with milk.

Excessive and weakening sweats may be prevented by the patients drinking two or three glasses of Schwalbach-water, before stepping into the vapour-bath.

The physician must determine, whether the patient is to bathe in this manner every other, third, or fourth day, and how long he is to continue in the bath.

Vapour-baths never should be taken without attendance.

Kortum justly declares, that the more robust, insensible, cold and phlegmatic, and the less plethoric, and liable to congestions towards the head a person is, the more freely he may make use of vapour-baths.

All baths raise the excitement of the nervous system; this is felt principally in the eyes; on which account much reading immediately after the bath, is as pernicious to the eyes as continued meditations are to the brains.

The query, whether it be adviseable to use other medicines simultaneously with bathing in and drinking thermal waters, has been satisfactorily decided by Dr. *Hufeland's* acute

discussion of this subject; and if ever any medical axiom was true, this may be said of that of a certain celebrated follower of Hypocrates, who declares: that the worse the physician is, the more liberal he will be in dispensing medicines. Reading the pretended monographies of these Aesculapius's, we are tempted to believe mineral springs to be sovereign remedies against all possible diseases. But when the patient, fully relying upon the sanative powers of the source, arrives, he is again crammed with pills and powders, and made to believe, that he is indebted for his recovery not to the virtues of the mineral water, but to the medicines he has taken. Thus we see that in many watering-places *Tinct. Aconit.* and the like, are administered along with general and partial baths, and the swollen and still sensible limbs of the poor patients rubbed for weeks together with stimulating ointments and essences, that paralyse in every respect the salutary influence of the thermal water.

Reflecting on the proceedings of these gentlemen, we might justly suspect the domestic physician of the patient to have been an ignorant dabbler in medicine, guilty of numerous mistakes, or in possession of but a scanty proportion of medicaments *).

*) Dr. *Hufeland* says, among others, very correctly: „What are we to say of the method of

In several passages of this work I have carefully pointed out the respective cases in which, together with the mineral water, pharmaceutical medicines should be administered, and in which the former are expected to produce only a secondary effect, which, however, frequently cannot possibly be dispensed with.

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modern practitioners, prescribing to their patients, in addition to the use of the most spirituous chalybeate waters, opium, rum, and the like, and, while the powerful thermal spirit (the *spiritus Sylvestris* of *Helmont*) is operating already in the body, and confining within the same body two or three spirits more, no less powerful, but totally different in their nature? The poor patient, whose body is made the arena for the conflict of an assemblage of spirits so essentially heterogeneous, is truly to be pitied!" *(Practische Uebersicht der vorzüglichsten Heilquellen Deutschlands.* S. 59.*)*

I may not, however, omit adding, on this occasion, a few apologetic words in behalf of such thermal physicians, as are known to be honest and intelligent inquirers. There are many patients that so pressingly call for auxiliary medicines, as to compel in a manner the physician to yield sometimes to their anxious and urgent demands, from fear of injuring the impatient sufferer, or from a desire of regaining his declining confidence. This is particularly the case, when the physician feels himself constrained to declare that the thermal water will subdue the disease first after a few weeks' or months' return from the watering-place, and act in a sanative manner only gradually. The domestic physician is not then informed of the cause of the simultaneous use made of medicines.

Particular care should, moreover, be taken, that the water is readily digested, and the body kept open.

The rules recommanded by the celebrated physician I have quoted in a former place, are, as I can attest from experience, sufficient to obviate such accidents.

Brandis has laid down the following dietetic rules concerning the external and internal use of mineral waters: „A remedy the powerful efficacy of which is not questioned by the most sceptical practitioners in medicine, should be resorted to with as much cheerfulness and tranquillity of mind and moderate bodily exercise, as possible, at a place calculated for either, in a salubrious and open air, and in the most pleasant season of the year. The patient should, at the same time, carefully shun whatever might interfere with the salutary effects of this remedy, nor obstruct digestion by excess in eating, or indulging himself in indigestible viands; neither should he interrupt the repose so necessary for his recovery by excessive bodily or mental exertion, an immoderate use of spirituous liquor, by giving room to his passions, sitting up late at night etc."

These words of a highly respectable medical veteran, I have commented upon already in a prior part of this work; I now have to add only a few dietetic rules, with regard to food, beverage and the passions.

It being regularly of great importance, that the whole body should be exposed to the entire influence of the thermal water, it is not to be disqualfied for that influence by *too great a quantity of food,* or by hurtful aliments.

A robust, well-fed person, upon whose body kind nature has formed a tetterous eruption, for the purpose of preventing severer sufferings, and giving a vent to superabundant humours, will never be cured by the water of even the most efficacious spring, if he, whilst using the mineral water both externally and internally, continue to pamper himself daily with strong broth and animal food; nay, with such an improper regimen his malady cannot but grow worse.

A gouty person whose articulations are still in an inflammatory state, will derive no benefit from the thermal water, if he daily take high-seasoned food, or drink firy wines.

A person afflicted with abdominal disorders, obliging his physician by continually overstepping the bounds of temperance and sobriety, to combat both infarctions and the original disease that had prompted him to repair to the wells for relief, will, undoubtedly, take it back with him to his home. „I am fully persuaded", says *Hufeland,* „that two or three indigestions contracted during the thermal treatment, will render the latter completely abortive."

Finally, how is it possible that a person

afflicted with a nervous disease, could derive any essential benefit from his residence at the wells, if he spends at the gaming table the hours left him by bathing and drinking the thermal water, and suffers his mind to be poisoned by the most fatal passions, instead of diverting himself in cheerful social circles and among the most ravishing scenery of nature?

I shall not dwell any longer upon examples of this kind: there are dietetical riffs and sandbanks for every individual disease on which many sufferer is wrecked every season, and by his own folly is deprived of the benefits he might have derived from our thermal water.

I cannot repeat it too often, that it is absolutely necessary that patients, whilst using the thermal water, should be most conscientiously moderate in all their enjoyments. These are no empty words, that may be disregarded with impunity. It is the sacred duty of a physician intrusted with the superintendance of the thermal treatment of patients, exactly and satisfactorily to point out the particular regimen fitting each individual case, to forewarn his patient against impending dangers, and to support the falling *).

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*) The duties of a physician appointed at a bathing-establishment, are far from being an easy

Experience has taught us to consider as hurtful to persons using thermal waters for the recovery of health, the following aliments: Acids and fruit *); pork, the flesh of ducks, geese; smoked and salt meat, heavy and fat fish-meals, and all animal food in general; heavy mealmeats, curdled milk, green and dried pulse, and all kinds of flatulent vegetables. — Spasms in the stomach, colics and diarrhoea are but too frequently the consequence of these forbidden viands.

Mineral water, though mixed with wine, is not fit to be drunk at table.

Patients are frequently tempted to commit excesses, especially in a country producing the

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charge; but patients frequently leave the wells without having derived any benefit from the thermal water, because the physician, under whose guidance they have placed themselves, neglected to acquire a clear notion of the rise and progress of their disease, to analyse it minutely, and then to prosecute steadfastly the curative plan devised by himself upon mature consideration, or proposed by the patient's domestic physician. Physicians that do not scruple at any means likely to spread their fame abroad, mustering every day some hundreds of patients, and writing prescriptions, are far from having a just idea of the high importance of their calling.

*) Very ripe grapes are found to agree very well with many patients; nevertheless, they should not eat them without having previously consulted their physician.

most excellent rhenish wines, — but a determined resolution will enable them to resist such temptations. It should be considered, that all excesses communicate to the body an excitement different from that caused by the mineral water, which frequently produces the most fatal consequences, and, at all events protracts the progress to convalescence.

Young people and vigorous men should not drink at table strong wines, but give the preference to the *lighter* rhenish wines, nor drink a larger quantity than they used to do at home. Only sexagenarians, or such as are sensible of the near approach of old age, may, for the better success of their cure, indulge themselves with the heavier sorts of rhenish wines.

All passions, especially those that (according to *Rochefoucauld)* are forbidden by nature to old age on pain of death, must be strenuously suppressed in the heart of him that earnestly desires to obtain the blessings of health. The philosopher must disencumber himself of his abstract ideas, the man of business bid a temporary farewell to his official concerns, and all should strive to blend the agreeable with the useful, and in a proper manner to enjoy the brief interval of ease and liberty granted them by Providence. The great variety of enjoyments, frequently so flattering to the senses, but hostile to the plan

of curative treatment, demand a firm character capable of resisting these temptations and of preferring such pleasures as are calculated equally to promote the cheerfulness of the patient's mind and the convalescence of his body.

CHAPTER XXIV.

Consecutive effects of thermal waters, or, of the secondary treatment, as it is called. Of the use of acidulae and chalybeates after that of the water of Wiesbaden. What is incumbent both on the physician and the convalescent during the secondary treatment?

MINERAL waters are naturally qualified to continue their efficacy in the human body for some time after they have been employed, and the manifest, or sensible symptoms of the disease are removed.

Spasms may cease, some local weakness be removed, defective digestion corrected, and the entire bodily energy restored (which is not even always the case, when resolvent thermal waters are used); inveterate abdominal complaints, along with their melancholy retinue, may be conquered, cutaneous eruptions have disappeared, and the paralytic sufferer be again master of his limbs: nevertheless, this cessation of morbid symptoms is not the termination of the activity of nature: ever active, it

continues its operations in its hidden laboratory. It may justly be said, that all diseases, not excepting those of a local nature, have formed around themselves an assemblage of disorders in the organic functions, *prior* to the state finally pronounced by the patient or the physician to be a disease that has developed itself in consequence of them.

Erroneous as it would be, if we were to declare a person to be in a good state of health, in the strictest sense of the term, while those preparatory conditions of an incipient morbid state, just mentioned, are not yet developed sufficiently, we should be equally mistaken, if we were to believe that the efficacy of the external and internal use of thermal waters did cease along with the *palpable* or visible symptoms of the disease. On the contrary, we may take it for granted, that immediately after the thermal treatment, nature is secondarily occupied to perform the after part of the cure, which frequently is as important as the first; for it has very often to remove the *more remote* causes of the disease under whose influence it was enabled to develope itself: for these very causes are not as yet completely extirpated: many a local weakness remains still to be removed, perhaps a great deal of morbid matter to be excreted. At all events the affected organs are still very irritable, strangers to their renewed functions, and very liable to be hurt by hostile influences.

We see the same phenomena ensue after diseases cured by means of pharmaceutic remedies, when the process of convalescence frequently is strikingly advancing, though no more medicines are taken. If we rightly consider the manner in which naturally tepid baths act upon the human body, what I am going to advance upon this head, will be comprehended yet more convincingly. Here we perceive much less of an operation *) founded upon chymical principles, than of a general excitability **) of the entire organism in all its parts. We are, in this instance, much less to look for a direct addition or substraction, as is observed when mineral waters are taken internally; nature, in consequence of the excited tendency to aid itself, and to restore the harmony of its functions, is constrained to oppose the morbid state and to remove it. The sphere of action peculiar to bathing is more general, that of the internal use of the water commonly is more local.

Hence we may conclude, why in diseases that are far advanced and complicate, the visible results of bathing are manifested later.

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*) S. Chap. VI.

**) I need not observe, that this expression is not to be understood in a pharmaceutical sense, as we do when speaking of overheating oneself a. t. l., which would be contrary to experience (if the thermal water be employed properly).

and must continue developing themselves long after the thermal treatment.

Experience teaches us: that some patients are cured completely here in four or six weeks, and sometimes even sooner, inasmuch as their cure depends upon the removal of such disorders as are apparent to the eye. An attentive observer will, however, in the first weeks and months subsequent to the thermal treatment, perceive phenomena proving that nature is still labouring to complete the cure.

Others there are that during the thermal treatment are delivered from their sufferings but imperfectly; one morbid symptom or the other is perceived no more, or the disorder has assumed a different form; but there are complaints still remaining that threaten to trouble the patient's health in future. An attentive and experienced physician, having profoundly scrutinized the nature of the disease, will soon discover in what manner the thermal water has acted upon the disease; whether the symptom that has been removed, was intimately connected with the original cause of the disease and its development, whether the change of form, f. i. the change of gout into hemorrhoïd's, of the hemorrhoïdal disposition into tetters etc., be a critical effort of nature, or not, and what consequences may be expected to ensue? Such a physician will be able, in most instances, to inform his patient, whether

he now may discontinue the use of the thermal water with an easy mind, and with a full reliance upon a complete recovery, or whether his disease require a longer continuation, or a repetition of the thermal treatment? We frequently meet at watering-places with patients to whom the above remarks are applicable, and whose convalescence is completed only by the consecutive efficacy of the thermal water. I would on no account be a physician at a watering place, if this secondary effect of thermal waters were not incontestably confirmed by experience. In many parts of this work, I have communicated observations placing this fact beyond all doubt, to which I refer the reader.

There are a great many disorders which *on account of the short duration of the patients' stay at the wells,* can be cured only by a secondary treatment. These are diseases arising from organic defects, which nature cannot get the better of within the short period of the stay of most patients at the watering-place, such as, f. e. sores, diseases of the bones, far advanced, deformations of the articulations, after gout, — palsies caused by idiopathic disorders of the nervous system, atrophy of limbs, if owing to apoplexy or wounds, and diverse metastatic disorders having affected organs that are most essential to the continuance of life. This is likewise the case, when it is necessary to restore checked secretions that are intimate-

ly connected with the animal economy. Thus, f. i. when the checked sweat of the feet is to be restored, or the bad consequences of its cessation are to be removed, a long continuance of the bath *) is required, and that this effect, if practicable at all, frequently is obtained only by the consecutive efficacy of bathing. Hemorrhoïds which nature wants to make fluid, sometimes afflict for years the sufferer with the most painful torments, and though the thermal water of Wiesbaden is peculiarly qualified to produce this wished for effect, while the patient is using it, yet there are instances of patients having left the bathing-place some weeks, nay months, before the hemorrhoïdal flux appears, and the sufferer is delivered from his torments.

But it is not only by the greater or less development of the disease and its progress, that we are able to judge whether it be curable or not, and at what time this is likely to be effected; no less care must also be taken to ascertain, whether the animal economy be capable of bearing the application of the mineral water in the different forms in which it uses to be administered; particular notice should also be taken of the greater or less degree

*) In the first Nr. of the *Jahrbücher der Heilquellen Deutschlands* I have communicated a very interesting case of this kind.

of the energy of the bodily functions, and of the duration of the patient's stay at the watering-place. Even the disposition of mind requires to be carefully taken into consideration, as I have shewn in a former chapter.

There are, finally, cases in which the duties imposed upon us by the healing art do not allow us to suffer the patient's cure to be completed at the wells. I have seen patients who, being seized with an irresistible nostalgy, were obliged to return home much sooner than they had originally intended. The consecutive effect of the thermal water frequently completed, contrary to my expectation, the cure which had appeared to depend entirely upon a longer use of the mineral water,

It happens sometimes that neither the skin nor the excitability of the whole body can sustain any longer a continuation of the external and internal use of the water; but the impulse nature has received, suffices to forward convalescence to a certain degree. A continuation of the thermal treatment would destroy the advantages gained already, and be attended by additional ills, the least of which would, with many, be a most fatal diffidence in the possibility of their being cured.

This is particularly necessary when we are obliged to *temporise,* or, what is more advantageous, when the patient is to be made to undergo a twofold thermal treatment in *one*

bathing-season. The patient then is made to bathe and to drink until his susceptibility of the efficacy of the thermal water appears to have gained the highest point, when (circumstances and the season permitting) bathing and drinking the thermal water are discontinued for 6—12 weeks. In this intermediate period the activity of the mineral water is going on; the receptibility of the body for the latter revives, and the patient can bear the thermal treatment perfectly well, if repeated in the latter part of summer. This repetition of the thermal treatment in *one and the same* season affords the important advantage of a twofold secondary effect of the thermal water, and the disease which, without this modification of the use made of the spring, would, perhaps, have grown incurable, or, at least have required a much longer thermal treatment, is conquered completely in *one* summer.

Before I proceed to deduce from the foregoing remarks some rules to be observed during thermal treatment, it will be proper that I should say a few words concerning the use of acidulae and chalybeate waters after that of Wiesbaden.

The particular case of the patient frequently renders it convenient that acidulae should be taken, either simultaneously with the *bath*, or after the external and internal use of our thermal water.

Some eminent german physicians have, however, of late decidedly objected to the employment of chalybeate water, immediately after the internal use of a resolvent thermal water, believing that acidulae might set aside too soon the resolvent effect excited in the organism by the thermal water, and that it was difficult exactly to determine the limits to which it should be suffered to proceed.

This view comprehends an incontestable practical truth, though it must be observed that the assertion is too general, and is applicable only to those strongest ferruginous waters that contain a great portion of iron, and only a small quantity of alcaline and saline particles, like those of Driburg, Pyrmont, Spaa *) etc. When the process of resolution has first been excited and is far from being completed, as also, when the active hemorrhoïdal tendency (S. Ch. XI) may not be pronounced to be extinct, such ferruginous waters are hurtful.

But when the resolution is completed, and the material settlements are removed, the system of nutrition often imperiously demands being invigorated powerfully, especially when the

*) *Osann* has treated this subject in a very solid and satisfactory manner (S. his treatise *Ueber Kaiser Franzensbad, Abschnitt* 3, *Cap.* 2, where he has drawn a very ingenious parallel between chalybeate springs and alcaline-saline thermal wells.)

curative means applied in the first part of the treatment were of a debilitating nature, and the powers of assimilation reduced, ferruginous waters frequently are wonderfully efficacious.

But we must be perfectly satisfied that the resolution is completed, before we resort to the employment of a *very powerful* chalybeate water, which, in this instance, might prove highly injurious. The site of Wiesbaden is, particularly in this regard, highly favourable, on account of its not being far distant from the wells of *Selters, Geilnau,* and *Fachingen,* which in the happy composition so conveniently unite resolvent with tonic properties, and form the best transition to the water of *Schwalbach.*

When such cures, at our watering-place, are drawing near their close, I desire sometimes my patients to drink our thermal water in the morning, and in the afternoon one of the aforementioned alcaline and saline acidulae, until I am satisfied that they also can bear them in the morning.

There are some complaints that require that the patient, in conjunction with our *baths,* should drink one or the other of these mineral waters, which are taken either cold or warm, with or without milk, according to the state of the patient's organs of digestion. In rheumatic and catarrhal affections, these waters, if any apprehension should be entertained of

their being too irritating, may, according to Dr. *Hoffmann's* *) advice, be mixed with whey. Thus irritable patients are properly prepared for the transition to the chalybeate waters of Schwalbach, and it is none of the least advantages of the wells of Wiesbaden, that its favourable site admits of the simultaneous use of so many of the most efficacious and different mineral wells, one of which is the excellent sulphureous spring of *Weilbach,* three leagues distant from here.

Patients that, after having used the thermal water of Wiesbaden, are directed by their physician, to let some weeks pass, before they commence using that of *Schwalbach,* may spend the intermediate time in the enjoyment of the charms of the most beautiful and salubrious country of all Germany. The neighbouring *Rhinegau,* with its numerous natural beauties, the towns of Mayence, Mannheim, Heidelberg, Darmstadt, Francfort and Coblence, all of them environing Wiesbaden at a small distance, which renders excoursions to them very convenient, abounds with excellent treasures both of nature and art. Such as prefer devoting that intermediate period to a short voyage

*) *Fr. Hofmann de connubio aquarum mineralium cum lacte longe celeberrimo. Halae* 1725.

I scarcely need observe, that this medication sometimes requires the aid of snailbroth and eggs, mixed with whey.

down the Rhine, and to view the finest parties of this river, for which they have every day the convenience of a steamboat, affording every comfort they reasonably may desire. The towns of Coblence, Bonn and Cologne commonly are the objects of these excursions.

It now remains for me to offer a few remarks concerning the precaution to be observed both by physicians and convalescents, after the external and internal use of our thermal water, before the latter set out on their return home, and to deduce from the preceding observations some consequences applicable to this highly important period.

Gradually abandoning the external and internal use of the thermal water, the convalescent prepares to return home. Though all morbid symptoms should have disappeared entirely, convalescents should ever bear in mind, that their cure is not yet accomplished entirely, and that nature, returning to its normal state, is still labouring to gain its chief end, viz. the cure of the disease. It is, therefore, a general rule that even such as enjoy the most desirable state of health, after the thermal treatment, should still consider themselves as convalescents, and regulate their mode of life accordingly. They should return home only by short stages, which is the more necessary, the more irritable their body is, and the

more violent the disease was under which they laboured. I have seen very fatal consequences arise from the neglect of this rule, and convalescents pay dearly for returning home post-haste. When arrived at home, the convalescent should devote the first weeks, and, if his disease was of a very dangerous nature, the first months, chiefly to the most careful attention to his health. It is of the highest importance that the newly recovered strength, so very liable to be injured, should be husbanded most sedulously, and improved by a proper regimen. Hence, it is very necessary that particular attention should be paid, during that period, to external influences, and to make them to correspond, as nearly as possible, with those at Wiesbaden. This is particularly required with regard to food, exercise, exertion of the mind etc. provided they agreed with the physical wants of the patient.

Convalescents that immediately abandon themselves again anxiously to their professional avocations, and from morning to night confine themselves to their writing-desk, spending their days amidst incessant mental exertions, and giving free vent to their passions, never will recover their health completely, and may be sure of sowing the seeds of new sufferings. If the calling of the convalescent absolutely demand profound meditation or a sedentary life, the needful care of his health demands

equally imperiously, that he should devote to his avocations only some hours in the day, and on no account stint himself of the requisite bodily exercise.

The regular physician of each convalescent returning from the bath, is bound in duty, to observe him closely, and to endeavour to discover the ways by which nature strives to expel the remaining morbid matter; whether crises have commenced or whether they be in progress, or have ceased already, and then regulate his regimen as circumstances require.

All convalescents should be dispensed from taking medicines, at least for some months, though their health should not appear to be re-established completely *), especially in very complicated cases, which do not allow the physician to form a determined opinion. Nature is extremely active after a thermal treatment; it acquires, as it were, the power of acting in *all* directions by the consentaneous

*) All intelligent physicians know, that this rule is liable to considerable exceptions; but as they are only *partial objections* to a general rule, medicines should be administered with great circumspection on such occasions. The thermal treatment frequently serves only as a means preparatory for the execution of a grand plan of treatment; but, even when this is the case, the second part of the treatment should not be *begun* with very active medicines.

cooperation of all corporeal faculties, for the purpose of restoring health. The activity of art is more limited, being, in most instances, constrained to compel nature to proceed on a very confined given tract, to develope its powers. How likely is it then here, that some salutary activity should be checked, or a crisis be stopt in its simple display. What I have said on this point is particularly referable to diseases which, on account of their nature, are cured gradually *only* during the secondary treatment, as it is called, by the revived faculties of the body. I have pointed out these diseases already in different parts of this work, and illustrated this subject by the relation of numerous cases.

It is frequently necessary that the convalescent should drink some mineral water in larger or smaller doses, either for the purpose of invigorating the organs of digestion, after the use of a resolvent thermal water, or of raising the vigour of the body in general; it is particularly in cases of this kind, when bitter extracts are most convenient as secondary curatives. Sometimes the shortness of the patients stay at our wells, especially when he continues being troubled with constipation, requires that he should continue, at home, to take small doses of thermal water.

The psychical part, too, of many that resort to our wells for the recovery of health, is painfully affected, and it is none of the least

happy results of the use of our thermal springs, to see how their mind, overwhelmed with long sufferings, gradually shakes off the cumbersome load, and regains new vigour, when animated with a firm belief in the probability of success, with courage to disencumber themselves of their sufferings, they are elevated with the cheering expectation of happier days; when they cease watching anxiously every morbid sensation, which, as experience teaches us, frequently produces a long train of severe sufferings. This happy state being attended with the firm resolution to obviate as much as possible a return of the conquered foe *), an extensive field of useful activity offers itself both to the physical and moral physician of the convalescent.

*) Man must, indeed, be animated with a lively internal sense of the actual source of his moral power, and not fancy that himself is the sole author of it.

CORRECTIONS.

Page 2 Line 6 from the bottom, for *avanced* read: advanced. — P. 3 L. 14 from the top, for *in* r. is. — P. 4 L. 10 f. t. b. f *schall* r. shall. — P. 10 L. 3 f. t. t. f. *ar* r. or. — P. 11 L. 7 *praised* r. its. — P. 11 L. 19 r. a *rendez-vous*. — P. 13 L. 3 f. t. t. f. *to* r. of. — P. 14. L. 7 f. t. t. f. *to* r. of. — P. 15 L. 10 f. t. t. f. *in* r. is — P. 16 L. 12 f. t. b. f. *eigt* r. eight. — P. 18 L. 3 f. t. t. f. *et* r. and. — P. 18 L. 16 f. t. t. f. *do* r. does. — P. 18 L. 11 f. t. b. after *apartments* insert: are. — P. 20 L. 10 f. t. b. after *for* insert: a. — P. 26 L. 8 f. t. t. f. *pact* r. part. — P. 32 L. 5 f. t. b. after *ereign* insert: to. — P. 90 L. 7 f. t. b. f. *develop* r. develope. — P. 93 L. 9 f. t. b. f. *water* r. waters. — P. 94 L. 13 f. t. t. f. *ty* r. to. P. 113 L. 10 f. t. t. f. *bath* r. baths. — P. 125 L. 14. f. t. b. f. *develop* r. develope. — P. 144 L. 15 f. t. b. f. *vily* r. an oily. — P. 146 L. 15 f. t. t. after *and* insert: is. — P. 146 L 15 f. t. t. for *with* r. by. — P. 148 L. 6 f. t. t. f. *time* r. times. — P. 150 L. 13 f. t. t. f. *milkscap* r. milkscab. — P. 161 L. 13 f. t. t. f. *sleeplessness* r. sleepiness. — P. 175 L. 9 f. t. b. f. *phtisie* r. phtisis. — P. 176 L. 6 f. top, dele the *comma* after: requisite. — P. 183 L. 11. f. t. b. f. *develop* r. develope. — P. 191 L. 15. f. t. t. f. *althoug* r. although. — P. 194 L. 2. f. t. b. f. *check* r. checks. — P. 199 L. 3 f. t. t. f. *physicians* r. patients. — P. 203 L. 9. f. t. t. f. *inquinal* r. inguinal. — P. 208 L. 7 f. t. t. f. *bath* r. bathe. — P. 225 L. 1 f. t. b. f. *ths* r. this. — P. 231 L. 2 f. t. b. after *in* insert: a. — P. 237 L. 15 after *setting in* insert: in. — P. 247 L. 10 f. t. b. f. *precusory* r. precursory. — P. 250 L. 10 f. t. t. f. *are* r. is. — P. 253 L. 8 f. t. t. f. *or* r. nor. — P. 337 L. 12 after *horses* insert: which I do not hesitate to transcribe here. — P. 337 L. 16 f. t. t. f. *followed* r. occasioned. — P. 337 L. 17 f. t. b. f. r. by the *animal's*. — P. 350 L. 13 f. t. b. after *patient* dele *be*. — P. 353 L. 8. f. t. t. f. *or* r. nor. — P. 353 L. 13 f. t. t. after *regimen* del. *from*. — P. VII. Preface. L. 10. f. t. b. after *have* insert: not. — P. XI. L. 9 f. t. t. dele the comma after *rendered*.

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